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BRIGADIER GENERAL BRIANT H. WELLS

DEPUTY CHIEF OF STAFF, U. S. ARMY

General Wells was born in Salt Lake City, Utah, Dec. 5, 1871. In 1894 he graduated from West Point and was appointed a second lieutenant of Infantry. He served in the Infantry in the 2d, 18th and 29th regiments in all grades up to that of colonel. In the Spanish-American War he served at Santiago where he was wounded, and nominated for brevet captain for gallantry in action. He also served in the Philippine Insurrection in many engagements. In the World War, General Wells was a member of the American Section of the Supreme War Council, and later was chief of staff of the VI and IV Army Corps. He holds the D. S. M. and other decorations. The new deputy chief of staff is probably best known to the Infantry as former commandant of the Infantry School. He has served on the War Department General Staff since the World War as chief of the War Plans Division and as G-4, which latter position he held prior to his assumption of his new duties on May first. General Wells is at present vice president of the United States Infantry Association

INFANTRY JOURNAL

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Tactics and Mechanization

By *Colonel* J. F. C. Fuller, *British Army*

IN war the object of a commander is to accomplish victory at the smallest possible cost and loss, and the means whereby he attains his objective in the field is by developing mobility through protected offensive power. He strives to attain freedom of movement and action through combining a variety of arms and weapons in such a manner that fighting power is expended economically, by which is meant the obtaining of full value for losses sustained and for energy and material used up.

It is obvious that changes in civil life must intimately affect the life of an army. It is equally obvious that changes in science, industry and engineering intimately affect the nature of weapons, and as long as these civil changes continue we must expect coincidental changes in weapons, and the means of movement and protection we employ. As weapons change so must tactics (the art of fighting) change, and as this art changes, so must organization and training change, just as they do in civil engineering and industry. Yet whatever these changes may be, our primary tactical function remains the development of mobility through protected offensive power. All other tactical functions are subsidiary to this one, because, in fact, it embraces them all.

From the close of the Napoleonic wars, that is when steam-power began to forge ahead and remodel civil life, right up to the outbreak of the Great War, we find a vast and never ending improvement in weapons, that is in offensive power, but we find no comparable improvement in means of protection—that is, other than through weapons themselves. Further, means of tactical movement remain unchanged, namely, muscular—human or animal.

This article and the discussion that follows contain many opinions on the important topic of the mechanization of military forces and its practicability today

Before the outbreak of the war this unceasing improvement in weapon-power threw tactical ideas out of focus. It was considered that mobility could be developed through offensive power alone, and that offensive power—that is, hitting—would provide its own protection. The primary tactical function was then shorn of one of its essential elements, and the result was that tactics became deformed. Immediately the war began human nature, the primary function of which is to cling to life and shun death, immediately re-

adjusted the balance by suggesting the trench to the soldier, so that the protective element might be reintroduced.

In the circumstances it was the only thing that could be done. Nevertheless, though offensive power was now protected, no mobility worth talking about could be developed from it. Gas, as a means of asphyxiating life in a whole area, was rapidly countered, and even the most powerful artillery bombardments resulted only in limited penetrations, and the formation of battle salients in which the attackers suffered more heavily than the defenders who held their outer perimeters. By these means the war could only be ended through attrition; tactics had ceased to be an art, they had degenerated into mathematical calculations of bullets and shells.

THE INFLUENCE OF PETROL

In the history of war, if it is not so today, it will one day be realized that the introduction of petrol-power marks a change as all embracing as the introduction of gunpowder. Gunpowder changed the form of war, but it did not change its primary tactical function. Before fire-arms were used battles were mainly assaults; after they were adopted they became attacks culminating in assaults. Armies advanced by roads, then deployed, frequently when in view of each other, then they attacked over two to three hundred paces of ground, and finally delivered an assault. In both cases mobility was developed from protected offensive power.

By the beginning of the present century, the range and accuracy as well as the volume of fire of weapons had increased to such an extent that the assault became the exception and not the rule. This was well recognized after the Franco-Prussian and Russo-Japanese wars, with the result that tacticians saw that frontal attacks had become unprofitable therefore they advocated enveloping attacks instead.

FIRE-POWER INCREASED

In the Great War fire-power had largely been increased by the general adoption of the machine gun, and such vast numbers of soldiers were deployed that more frequently than not fronts became continuous, and, until they were broken, enveloping attacks were rendered impossible. The question of how to break the enemy's front, had therefore to be answered before mobility could be regained. It is here that petrol-power came to our assistance.

The influence of petrol-power on the war was so stupendous that it has not even today been fully appreciated. It changed the whole form of war, and it will continue to change it as surely as it has and is changing the form of civil life. Last year there were 22,000,000 motor cars in the United States alone, that is one to every five inhabitants. In this fact can be read to a very large extent the future of armies. Without petrol-power the great artillery battles would have been impossible, since the millions of shells fired could not have been carried forward from the railheads. Without petrol-power the aerial bombardments of London, Paris and other cities would have been impossible, and without it armored car and the tank attacks would have been unknown. It is with this last mentioned weapon that I will now deal.

Strictly speaking, the tank is not a

weapon, it is an armored cross-country vehicle which carries weapons; it is, in fact, only a mobile machine gun, or gun mounting, just as a ship is. It was introduced and used during the war as an assault weapon, and since Infantry fire could not aid or stop its advance when it was used, the assault preceded the attack. Strictly speaking the Infantry attack ceased to be an attack, and became a follow-up or slow pursuit.

The weapon which assisted, or resisted, the tank was the field gun. As the war proceeded it became more and more obvious that, on ground over which tanks could move, Infantry, either to assist or resist a tank attack, was useless. Infantry, which since the introduction of gunpowder had become the queen of the battlefield, was relegated to the position it held during the Middle Ages. It could still fight in woods, swamps, and amongst hills, but its reign over the plains was at an end. This, in my opinion, is the supreme tactical lesson of the war: petrol-power enabled armor to be reintroduced, and armor enabled offensive-power to be protected, thus it enabled the primary tactical function to be reintroduced. It reestablished tactics as an art.

An art can only be appreciated by people possessing some knowledge of it, or by those born with an artistic temperament. In 1919, military artists were sadly lacking, and the result of this was that in place of taking the above lesson to heart all great armies went back to their 1914 military organization plus an extensive increase in small arm fire-power. It was not the bullet which was the decisive factor in 1918, it was armor, and since, in all civilized armies today, bullet-power is about three times as great as it was in 1914, we are in a worse tactical position that we were thirteen years ago. As far as I can see the only solution to this problem is mechanization.

What is our object in mechanization? It is to endow the army with a higher energy than it possesses today; it is to replace and supplement muscle-power by mechanical-power. The problem which faces us is identical to that which faced industry on the advent of steam-power. We have got to replace muscle-work by machine-

Field Marshal Sir Douglas Haig on Mechanization

AS AN INSTANCE of the interdependence of artillery and tanks, we may take the actions fought east of Amiens on August 8, 1918, and following days. A very large number of tanks were employed in these operations, and they carried out their tasks in the most brilliant manner. Yet a scrutiny of the artillery ammunition returns for this period discloses the fact that in no action of similar dimensions had the expenditure of ammunition been so great.

IMMENSE as the influence of mechanical devices may be, they can not by themselves decide a campaign. Their true rôle is that of assisting the Infantryman, which they have done in a most admirable manner. They can not replace him. Only by the rifle and bayonet of the Infantryman can the decisive victory be won.

work, and the energy latent in oil and petrol enables us to do so.

This energy enables us to attain a vastly higher degree of mobility. It enables us to carry more powerful weapons, and to supply them with greater quantities of ammunition, and it enables us to protect ourselves with armor. By means of petrol we can become artists of war; without it we can only remain foot-sloggers, bullet-sloggers and bullet-slogged. It appears to me that there is no choice but that we must mechanize, and I will now enquire into how we should proceed.

THINKING IN FUNCTIONS

First and foremost we must get the present form of war out of our heads. What is this form? Battles waged by Cavalry, Infantry and Artillery. We must forget these arms, and no longer be chloroformed by their names, or organizations. We must cease to think in names and must learn to think in the terms of tactical functions. This is the first step towards rational, in contradistinction to chaotic, mechanization. For example, a carpenter has a bag of tools, but he does not think in terms of hammers, pliers, saws, etc., etc., but in those of the functions of these tools. He thinks in terms of boring holes, sawing planks, hammering in nails, etc. He uses his tools according to their powers. If you were to ask him which is his decisive tool, he would think you were mad, for each is superior to the other when properly used.

The functions of a carpenter are to bore, cut, hammer, pull and stick, and he possesses a variety of tools in order to carry them out. If anyone invents a new type of tool which enables him to carry out the function required more economically than with those he possesses, should he have the money to buy, he buys it, because his wages depend on his work; he does not get his back up and fight the new tool tooth and nail. Yet this is what the soldier does with every new weapon invented, frequently he looks upon an invention as a personal insult.

In my opinion, if efficiency and economy are our aim, the soldier must cease to think in names, and learn how to think in tactical functions, because functions remain the same, and names very frequently change. Thus, an archer, an arbalister, an arquebusier, a musketeer, and a rifleman are all names for men equipped with various weapons which possess the same tactical function, namely to discharge a missile from a portable piece of artillery—the bow, the crossbow, the matchlock, the flintlock and the rifle. Weapons change in form, and their names change accordingly; but functions remain constant in nature, but vary in degree. If we will persist in thinking out tactical problems in terms of Cavalry, Artillery and Infantry, then we shall render our minds rigid to all new ideas. To persuade our minds to become flexible and recipient we must think in functions.

What then are these functions? To answer this question all we need do is to think out our main requirements in battle.

First, we have got to find our enemy and simultaneously prevent him from finding us. Once we have found him we must hold him, that is we must attempt to restrict his mobility. Thirdly, we want to hit him, and, simultaneously, fourthly, we want to protect ourselves from his blows. Once we have

exhausted him, fifthly, we want to smash him to pieces.

Here are five tactical functions, namely, *to discover, to hold, to hit, to protect and to smash.* In the past, discovery fell to the lot of light Cavalry and light Infantry; holding to light Infantry and Infantry of the line lightly protected by Field Artillery; hitting, to Infantry of the line supported by all manner of Artillery; and smashing, to heavy and light Cavalry.

Today we are faced by a host of new arms. Our aim as soldiers is to win a battle economically, or defend a position economically. Of these new arms the most important are: airplanes, tanks, armored cars, tractor-drawn and self-propelled artillery, antiaircraft guns, machine guns, and light automatics. Do not let us be petrified by their names, let us examine their powers and limitations, and then from these deduce their functions. Next we must compare their degrees of power with those of the older arms, and, when we have made our comparison, without prejudice we must decide which arms possess the highest degree of power.

THE INFLUENCE OF GROUND

In working out these comparisons, the deciding factor is ground, which possesses three tactical qualities: It aids or restricts mobility, offensive power and protection. Administratively, ground may be divided up into roadbed and unroaded country, and tactically into plain land, undulating country, hills, mountains, forest areas and swamps.

Of the newer arms I mentioned above all, save the machine gun and the light automatic, are moved by petrol, and with the exception of the airplane, the rest are moved, or will in the near future be moved, on tracked, half-tracked or six-wheeled carriages, that is they will be able to move across country. Of these machines I will examine the tank as an example.

THE MODERN TANK

Of all existing arms the modern tank possesses the highest freedom of movement over plain land and undulating country, but swamps and thick forests may completely stop it, and in hilly and mountainous regions its mobility may be restricted to a small number of easy approaches. On ground it can negotiate it has nothing whatever to fear from Infantry as today equipped, it has little to fear from any projectile throwing weapon with inferior mobility to itself. Even in 1918, on the Western Front, where no flanks could be found, and where guns could never be avoided, no well and strongly mounted tank attack failed to smash the German line, and in 1918 tanks were slow moving machines. To equip Infantry with an antitank weapon is of some use, but if this weapon is to be really effective it must be able to move as fast as any tank, but as it has to protect Infantry it cannot move far from them. Tied to slow moving Infantry such weapons may be compared to destroyers escorting a convoy at sea, their tactical radius of action is extremely limited.

I do not wish to labor this question, for to me the answer is self-evident, namely, that on country suitable to tanks, the tank can hold and hit more economically than Infantry can, and by holding I do not mean sitting on a position but taking up a position

which will prevent an enemy from moving from the one he is sitting on. For example, it is not necessary to enter a man's house to hold him in it, all that is necessary is to cover the front and back doors by a rifleman from outside.

As regards discovering, that is reconnaissance, I have frequently heard it said, that the tank is unsuitable, since it is a blind machine. I admit that the Vickers tank may not be the most suitable type of reconnaissance machine, but that it is of necessity blind is sheer nonsense. An Infantryman in a trench is normally blind, but in a tank on reconnaissance duty there is no reason why its commander should not stand with his head and shoulders completely outside his machine.

For smashing purposes, tanks are obviously more suitable than cavalry, since they are impervious to bullets, and for protective work, though they can largely protect themselves, there can be little doubt that they should be supported by artillery. As this artillery cannot be horse drawn, it must consist of either tractor-hauled guns or self-propelled ones. Of these two the second are obviously the most suitable.

We arrive therefore at this conclusion: That on open and undulating country mechanized arms will carry out the tactical functions far more economically and effectively than the older ones, because they are able to develop a higher mobility on account of their superior protected offensive-power, which is the primary tactical function itself. As to this there can be no doubt in my mind, for it is a matter of common sense.

In wars against civilized nations, plain land and undulating country is undoubtedly more important strategically and tactically than mountainous. In a war of the first magnitude I know of no decisive battle which has been won or lost in a mountainous area. Nevertheless we must be prepared to fight in these areas, for many subsidiary operations will take place in them. It is obvious that though tanks and similar weapons can assist in these localities, the arm which can most effectively move in them is Infantry supported by mountain artillery.

Thus by testing the tactical values of the mobility, offensive and protective powers of arms and weapons by the various categories of ground met with in war we arrive at an answer of no little value, namely that in the future we must divide each battlefield into two main tactical areas: areas suited to the movement of mechanized arms and areas not so suited. Then, whenever possible, if we distribute our arms accordingly, shall we attain the most economical results. For brevity's sake I will call these two areas tank areas and Infantry areas.

CHANGES IN ORGANIZATION

If this deduction is accepted, and I fail to see how it can be refuted, the next problem in mechanization is to organize an army so that it can maintain the primary tactical function in both the above areas.

In the tank areas we want four if not five main types of machines. To give them old names, we want light Cavalry, light Infantry, Infantry, Artillery and heavy Cavalry, or to call them after their tactical functions—a reconnaissance tank, a holding tank, a hitting tank, a protecting tank and a smashing tank. The first class should

The Human Element in War

The War Department, in 1922, made an exhaustive survey of the influence that modern scientific developments will have upon the technique of war, sending out questionnaires to chiefs of branches and others, and arrived at certain basic facts on which there was unanimous agreement. The conclusions were as given herein.—EDITOR

DUE to the great publicity that has been given to the possible effect of new instruments of warfare, coupled with the natural centering of public interest on means of destructions which are both new and spectacular, misconceptions are likely to arise in the mind of the public as to the powers and limitations of various weapons and the arms developing and serving them. The War Department, by making public in summary form the best military thought upon such subjects, hopes to insure that the heresy shall never become implanted in the country that any material means can ever replace in war, the individual soldier who is willing and able to fight.

Doctrines of tactics and of training will be based on the following:

1. That man remains the fundamental instrument in battle and as such cannot be replaced by imagined instrument short of one more perfect than the human body, including the mind.

2. That man in the bulk—meaning the greater portion of armed forces—fights with greatest freedom of action and with greater efficiency when on foot, not on horseback, in a tank, in an airplane, in a fixed fortification, etc.; that to achieve decisive action he is best armed with the rifle and bayonet; that man is rendered least vulnerable when merely clothed against the weather and armored by his own agility, with steel helmet.

3. That battle is normally determined by physical encounter with the bayonet, or the fear thereof; all other agencies of destruction, as artillery, machine guns and airplanes, are auxiliary in their effect, however potent and serve to make possible the advance of foot soldiers to hand to hand encounters.

4. That Infantry is the basic combatant arm upon whose success normally depends the success of the army; the primary duty of other arms, when associated with Infantry is to assist the Infantry to achieve its mission by protecting and aiding it in every way, and by destroying enemy resistance to its efforts.

5. That no arms except Infantry can be expected under normal conditions to destroy an approximately equal force of enemy Infantry armed with rifle and bayonet.

6. That, while Infantry is normally the basic arm in war, under certain conditions or during certain phases, cavalry may replace it as the basic arm, for example, in operations against mounted forces or against foot troops whose efficiency is below normal for any reason.

consist of armored cars, six-wheeled and possibly also half-tracked, and light one or two men tanks. The second class of machines somewhat similar to the present Vickers tank; the third, to the new heavy tank; the fourth should consist of self-propelled guns; and the fifth of extremely fast machines, of which no model as yet exists.

In my opinion, the third and fourth classes will eventually coincide. Then we shall get four main classes which according to their tactical functions may be compared to destroyers, light cruisers, battleships and battle cruisers.

In the Infantry areas the tactics and organization of the older arms will have to be radically changed, for whilst in the past it was the exception for these arms to fight in mountainous country, and the rule to fight over plain land and undulating ground, these will now be reversed. In these areas we require a true light Infantry, light Cavalry and light Artillery. We require a very flexible and mobile organization, very intelligent and lightly equipped men and few heavy guns.

The Infantry of the future have a far more difficult task to carry out than they had in the past, yet it is a far more interesting task, and a task which will require so highly trained a soldier that few, if any, conscript armies will be able to provide him. Reconnaissance will be the duty of the light cavalry, holding of light cavalry and riflemen; hitting of riflemen and light automatic gunners; protection of machine gunners and mountain artillery, and smashing of light cavalry, riflemen and cavalry machine gunners. It will be seen, therefore, that the changes in organization will be considerable. Not only does the future demand different types of soldiers for different operations of war, in which there is nothing new, but an organization which will include two categories of soldiers, each of which moves at a different pace. The nearest simile to this that we find in history is during the Seventeenth Century when sieges were more frequent than field battles. Then the field army of the day was followed by a slow moving siege train.

The siege train of the future is the nonmechanized arms, arms which storm mountains and forests in place of fortresses and castles. The field army is the mechanized force.

SUMMARY

I will now briefly summarize what I have written. The probabilities are that in the future petrol-power will revolutionize the art of war as extensively as did the introduction of firearms. Whatever this revolution may be, the object of battle will remain the attainment of economical victory through mobile protected offensive power. This power is developed by means of weapons, the use of which should be governed by their respective powers and limitations.

The older arms are all directly limited by muscular-power; the newer break away from this limitation, since petrol enables a higher mobility, offensive power and protective power to be attained. Petrol, consequently, must change the present form of war. How will it change it? The answer to this question demands clear thinking.

To think clearly we must cease thinking in names of weapons and arms, for if we do so we mentally shackle ourselves. In place we must think in tac-

tical functions, and abandon any idea of the discovery of a universally decisive arm, for such an arm is as mythical as the universal solvent of the alchemists. Each arm is superior to any other arm when conditions permit of it developing greater effect.

The tactical functions are finding, holding, hitting, protecting and smashing, and the side which can develop the higher mobility will obviously have time in its favor.

Which weapon will in any set of conditions prove the superior weapon depends very largely on the nature of the ground. Ground may be divided into two areas: Tank areas and Infantry areas, from which two main categories of tactics can be developed, namely plain warfare and mountain warfare. Finally, history is a great mental laxative, it frees our minds from shibboleths, and happily it has a habit of repeating itself. In the Middle Ages the knight in his armor ruled the plains, and the staunchest Infantry came from Switzerland, Scotland and Wales. Yet there was nothing new in this, for in the days of Joshua the Canaanites with their chariots of iron were masters of the valleys, while the children of Joseph held fast in Mount Ephraim.

Plus ça change plus c'est la même chose.

Discussion

By Brig. Gen. S. D. Rockenbach

Commanding General, District of Washington; formerly Chief, Tank Corps, U. S. Army

TO get a clear understanding of the above article by Colonel Fuller, leading exponent of mechanical warfare, it is necessary to keep in mind that it is a prophecy, but in view of the great improvement in the gas engine and the reduction of friction, this prophecy is well founded and may come true six months after the production of a fast, durable tank. Mechanical warfare will not, as the romancers predict, do away with armies, for tanks and other fighting machines are auxiliaries of limited employment and where they can be employed; their destructive power while controlled by a few men exposed to death is made by many men, in repair shops and in factories. One hundred light tanks on a 10,000 yard front, manned by two hundred men, may perform the work of 10,000 riflemen, but the total number of men unexposed, required to keep those tanks operating efficiently in battle will be large. Mechanical warfare will change tactics, organization and training. Mechanical warfare reduces casualties by replacing human power with mechanical power.

Colonel Fuller contends that to attain the degree of artist in the art of war, to conduct battles economically, we must mechanize, obtain the machines that science and industry have made available, and intelligently use them for the saving of life and sinew.

The recent German pronouncement,

that the latest developments in tanks have brought us to the threshold of a new tactics, is expanded and broadcast. While even the enthusiastic among us for mechanical warfare may not be able to accept in toto the views of the extremist, he will certainly cause us to bestir ourselves and bring us to the realization of the fact that commanders will be held for an economical expenditure of their fighting power. We can no longer just muddle along and accomplish our mission regardless of the expenditure of men.

It is believed that the Americans have the right conception: The Infantry being the only arm that can function under all conditions of terrain and weather, reliance must be held on it; all other arms and services are auxiliaries to the Infantry and must be trained to facilitate the advance of the Infantry. Our commanders have that conception and do not think in terms of cavalry, artillery, airplanes, or tanks. Under favorable conditions for the employment of Infantry, the commander uses such of his auxiliaries as are best suited to the situation to facilitate the advance of his Infantry. In other words, as so aptly stated by Colonel Fuller, he restores his mobility through protected offensive power.

The artist in tactics is restrained by the facts of peace: sluggish minds unstimulated by the excitement of war and the necessity of quick action, and the dormant interest of the people, resulting in meager appropriations of funds. We are limited to what we can get for defense.

Cross-country transportation is the big thing for an army; one of its special forms is the tank, an armored cross-country vehicle which carries guns and their crew accompanied with cross-country tenders. In other words, a land fleet.

Colonel Fuller's tank battle is not conceivable in the first year of the next war, for no nation can build tanks in sufficient numbers for that purpose. The English cannot produce the requisite number of the Vickers tank without disrupting the other arms and services, and if they could, it would not be desirable for many defects are found in the Vickers and it is far from being the ideal tank, the tank Colonel Fuller visions.

The Germans, whom the Allies relieved of their old weapons, alone can manufacture the latest arms. They are prohibited from building tanks, yet they are most advanced in the new tactics employing tanks, due to their training with dummies.

"Infantry either to assist or resist a tank attack were useless." At the battle of Cambrai, planned by Colonel Fuller, tanks gained a most stupendous success on the first day when they were closely followed by the Infantry trained with them. The second day saw, generally speaking, the end of any cooperative action between tanks and Infantry and little success. There were no tank reserves. The divisions available for exploiting the success were not used. On the 1st of December, ten days later, the British had lost all the material gains of the tank success. Tanks demonstrated their ability to open the way for and facilitate the advance of the Infantry, and the inability of the machines of that time to hold. Little is the gain from reaping, if we cannot gather. Had the British Third Army commander known tanks and directed his and the French di-

visions available properly, Cambrai would have been a great victory. He would have attained freedom of movement and action through combining a variety of arms and weapons. That he did not do so, caused failure.

At Amiens on the 8th of August, the proper combination of arms and weapons resulted in the black day for the German army (Ludendorf). We wish to stress that it is only by an intelligent combination and employment of the Infantry and its auxiliaries that an economical (minimum expenditure of men) victory can be gained.

TYPES OF TANKS

The modern tank: "On ground it can negotiate it has nothing whatever to fear from Infantry as today equipped." Our Infantry has a portable effective antitank gun.

Colonel Fuller's five types of tanks are impossible from a production point of view and, it is believed, undesirable from a tactical point of view. The one-man tank to replace machine gunners and for reconnaissance, an idea of General Estienne, chief of the French Tank Corps, was demonstrated by Renault to be impracticable, useless. It reminds one of the freak one-man orchestra of side shows where one man with his toes, his knees, his shoulders, his head, his mouth, his elbows, his hands, and an arrangement of levers plays every instrument of a band. He has not come into general use as an orchestra. Armored wheel cars, six-wheeled and half-tracked, are economically useful under favorable circumstances, but they are compromises and increase the number of types. Thought of them will cease on the production of the improved tank.

The second type, somewhat similar to the present Vickers, is the ideal for operation with cavalry and in the reserve of divisions, corps and armies.

The third type, the new heavy tank, due to the large target it presents, its weight and slow speed, is undesirable. Weight is the *bête noir* in tank production, the armor and engine are the main factors in this. When we increase the protection from machine gun and rifle bullets to that from 37-mm. shells we increase the weight 40 per cent, due to armor alone, the heavier engine and other parts increase it 60 per cent more. Thickness of armor greater than one inch is valueless because 75 and 155 shells will by their explosive effect destroy any tank. A 40-ton tank moving at a speed of 6 miles per hour has less smashing power than a 15-ton tank moving at 10 miles per hour.

The fourth type, self-propelled guns, which we must have, we do not class as tanks.

The fifth type, extremely fast machines, from a mechanical point of view, are visionary.

From this extremely valuable article we can learn much:

1. First, we must accept that tank (cross-country vehicle) development has brought us to the threshold of a new tactics. This is a situation that must be studied and our prospective commanders trained in the employment of this new weapon. Discard General Muddle-Along, who proposes to take positions regardless of cost.

2. Mechanically we must develop and perfect the cross-country vehicle so that all weapons, material, ammunition, supplies, etc., that must be taken beyond the railhead can be moved

under engine power and not by the sinews of men and beasts.

TWO ESSENTIAL TYPES

Only two types of tanks are essential and obtainable:

1. A light (not over 6 tons), durable, fast vehicle, with a 37-mm. or machine gun, capable of operating beyond the railhead under its own power. This is especially the Infantry accompanying tank and the reconnaissance tank, where automobiles cannot operate.

2. A medium tank (about 15 tons and under 20 tons), durable, fast (up to 16 miles per hour across country), carrying a 2.4-inch gun, two permanently mounted machine guns, with all-around fire and one demountable antiaircraft gun. This is the accompanying tank for cavalry and for the reserve of divisions, corps and armies.

Concentrate thought on producing these two types (if you have ideas of improvement, study the experiments and trials of the past thirteen years), and back the Chief of Infantry and the Chief of Ordnance in getting them. It is a subject of vital importance to all the arms and services and when they are required to demonstrate how they propose to cross the battle terrain economically they will awaken to its importance.

Vision is essential and valuable, but obtaining a suitable land fleet under peace-time conditions, has been my earthly ambition for over ten years, to the end that we may be prepared to conduct our future battles economically.

By Col. Frank Cocheu, Inf.
Assistant Commandant, the Infantry School

THE rôle of an army is to attack and defeat the enemy. An army must be composed of men armed with rifles and capable of making full and effective use not only of the fire power of the rifle, but of the bayonet attached to its forward end. These riflemen must be assisted by any number of auxiliary arms and auxiliary weapons. This much has been proved on the field of battle. Any other assumption regarding the organization of an army is unsupported theory or romance. Without question the extensive use of the internal combustion engine has revolutionized to a great extent our mechanical aids, and we must as a consequence look for a wonderful development in Infantry auxiliaries, especially tanks. We must not, however, fall into errors similar to those experienced during the World War when at different times the inexperienced and thoughtless were led to believe that intensive use of artillery, or machine guns, or airplanes, or gas, would end the war. The World War was finally brought to a close, due in great measure to the fact that Infantrymen, supported by its auxiliaries, evinced a willingness to leave their trenches and place their bayonets in the pit of the stomach of any enemy standing in the way. The next war will be ended for similar reasons.

I cannot subscribe to the following:

Infantry who, since the introduction of gunpowder, had become the queen of the battlefield were relegated to the position they held during the Middle Ages. They could still fight in woods, swamps, and amongst hills, but their reign over the plains was at an end.

This, in my opinion, is the supreme tactical lesson of the war.

Nor to this:

It was not the bullet which was the decisive factor in 1918, it was armor.

Nor to this:

We arrive therefore at this conclusion: that on open and undulating country mechanized arms will carry out the tactical functions far more economically and effectively than the older ones, because they are able to develop a higher mobility on account of their superior protected offensive-power, which is the primary tactical function itself. As to this there can be no doubt in my mind, for it is a matter of common sense.

Nor to this:

Thus by testing the tactical values of the mobility, offensive and protective powers of arms and weapons by the various categories of ground met with in war we arrive at an answer of no little value, namely that in the future we must divide each battlefield into two main tactical areas: areas suited to the movement of mechanized arms and areas not so suited. Then, whenever possible, if we distribute our arms accordingly, shall we attain the most economical results. For brevity's sake I will call these two areas tank areas and Infantry areas.

Nor to this:

Strictly speaking, the tank is not a weapon, it is an armored cross-country vehicle which carries weapons, it is, in fact, only a mobile machine gun, or gun mounting, just as a ship is. It was introduced and used during the war as an assault weapon, and since Infantry fire could not aid or stop its advance, when it was used the assault preceded the attack. Strictly speaking the Infantry attack ceased to be an attack, and became a follow-up or slow pursuit.

Let us adhere to lessons learned on the battlefield and at great cost, expending much effort, however, in developing to the utmost all mechanical aids, among which none is more important than the tank.

①

By Col. C. H. Miller, Inf. (Tanks)

Commandant, The Tank School.

THE views expressed in Colonel Fuller's article are those of an enthusiast on the value of tanks and armored cars and mechanized motor transport. They represent the trend of thought among certain officers who regard cavalry, and to a large extent Infantry (riflemen), as obsolete members of the combat team and would have air forces and land forces armed with machine guns and six pounders and artillery pieces protected by armor, in their stead.

In presenting the army estimate recently before the British House of Commons, the Secretary for War made the following statements:

Reorganizing the Cavalry—I will first explain my proposal regarding the cavalry. There is a responsible body of opinion holding that, in principle, the day of the horse is over, and that the duties of the cavalry should be performed, and would be better performed, by airplanes and by troops mounted in rapidly moving cross-country vehicles, such as light fast tanks and armored cars. On the other hand, it is urged that there are many military situations possible in various parts of the world in which, compared with the adaptability of the horsed unit, a mechanically transported unit would be at a great disadvantage. At present an unbridged river presents an unpassable obstacle to tanks and presents but few difficulties to cavalry, and there are many rivers in countries in which our army must be prepared to operate. I believe the truth is that we have not yet got the data upon which to make an irrevocable decision

as to the kind of military force which is to do the work hitherto done by the cavalry. For the present the best solution appears to be a combination of the two.

Last year I asked a committee of military experts to give me some advice as to the cavalry requirements of the army. They directed my attention, in the first place, to two grave defects in the cavalry as it is organized and equipped today. To take its place effectively in a modern army, the cavalry regiment has neither sufficient mobility nor adequate fire power. The lack of mobility is due partly to the excessive weight that the troop force has now to carry. This seriously reduces a regiment's speed and range of action, and the already narrow radius of action is still further limited by its dependence on its ponderous and slow-moving transport. The lack of fire power is partly due to an insufficiency of machine guns and partly to the unsuitability of the Hotchkiss gun. The Army Council has decided to take steps immediately to remedy the defects, so far as possible, by providing mechanical vehicles for the first-line transport and eight machine guns, instead of four as at present, to be carried in mechanical vehicles, instead of on pack horses. The question of finding a more efficient gun than the Hotchkiss will be actively pursued. At present, this reorganization will be confined to the six line regiments only, but the intention is to extend the new organization to all the cavalry as funds become available, subject to such modifications as experience may suggest. More research and experiments are necessary before we come to a final decision. To mechanize the cavalry completely with an unsuitable vehicle—and there is no suitable vehicle at present—would be a most expensive mistake. The horse may not be all that it should be, but, in the meantime, it is better than a vehicle that is all that it should not be. But I can assure the House that the provision of a suitable cross-country vehicle is the subject of continuous research and experiment.

Meanwhile, the reorganization which provides for the mechanization of the first-line transport and the carriage of the machine guns enables us to increase cavalry mobility and fire power, and at the same time to reduce the number of men and horses. For the present time cavalry regiments, instead of consisting of a headquarters wing, including the machine gun troops and three sabre squadrons, will consist of the headquarters wing, a machine gun squadron mechanized, two sabre squadrons, and mechanized first-line transport.

A New Experimental Force—Now I want to say a few words about further mechanization of the army. We are estimating to spend this year about 238,000 pounds on new mechanical vehicles, and we have set aside 125,000 pounds for research and experiment. This expenditure is really very small when it is remembered how big is the problem which we are just beginning to tackle. The internal combustion engine has revolutionized civil society in the last 20 years, and I cannot doubt that the changes it will cause in the army will be not less noticeable in the next 20 years. Though, for a petrol-driven army, the tactical functions will remain in form identical with those of present-day forces, in degree these functions will be greatly extended. Where in the past cavalry moved perhaps 20 miles ahead of an army in order to search for the enemy, armored cars will possibly be able to move more than 100 miles. For holding the enemy, these machines and others, such as mechanized machine gun units, will be able to circle around an adversary, and tanks, which are impervious to bullets, will have it in their power to hit and smash with far greater effect than the existing armies. To protect such petrol-driven weapons obviously, it will be necessary that artillery must be able to move and follow over all natures of country, and

consequently, that arm must also be mechanized.

It seems clear that, although the tactical functions remain the same in form, they are likely to change so extensively in degree that years of thought and experiment will have to be given to the numerous problems which the power of petrol has introduced into the realms of war.

These extracts show the attention that is being given to mechanization of the army in Great Britain.

We believe, however, that in the probable theaters of operation of an American Army, Infantry and Cavalry, as at present organized still have a place in the combat team, and that Infantry will fight on the "plains" as heretofore.

①

By Lieut. Col. W. B. Burtt, Inf.
Instructor, Army War College

IT HAS been often pointed out that the manner of fighting changes with the changes in weapons and offensive power. The innate conservatism in the human race holds back these changes until they are so obvious that even dull and stupid minds sense their necessity.

Colonel Fuller with a few other daring and courageous mentalities is doing the pioneer work necessary to explore the fields of the future combats. He has a difficult task, but he has approached it with so much simplicity that it should make a great appeal to every one except to him whose mind is closed, who lives in the past, and for whom the future can only be a mirror of his personal experiences.

No problem now before the military student is more portentous than the question of organization of the units which are to fight in the next war. The proper combination of our great fire-power (offensive-power as Colonel Fuller puts it) with mobility, and with protection, are the fundamentals of the problem. The selection and training of the personnel for these new units will proceed because the mechanical power must have human direction of an order commensurate with the material development.

With great daring, Colonel Fuller has brushed aside the old views of Cavalry, Infantry and Artillery—each as a separate distinct arm. It is necessary to do this if we are to visualize the battle of the future, for everyone revolts at the idea of a doughboy with a rifle assaulting a machine gun nest even without concealment.

Colonel Fuller brings forward the tank because it has protection and mobility.

Now in the discussion of the all-embracing power of the tank we must not lose sight of some of its limitations and accept too blindly the discussion of it. There are other elements such as the airplane which must be considered. Then there is the question of the proper combination of weapons. Colonel Fuller's views on tanks merit special attention. He does not make the tank the one and only weapon. He divides terrain into two general classes, that where tanks can be used and that where some other form of offensive must be employed. With this division of terrain it is possible to have several kinds of tanks for use by "tank armies" in a "tank country." But the principal objection that can be raised to such an arrangement is that nowhere can there be found terrain which can be assumed to be available for tanks alone.

We must take the ground as we find it, and by skillful use of the means

furnished us destroy the enemy and take over the ground he occupied.

Wherever there is a territory of considerable extent, there will be found woods, swamps, deep ravines, stony declivities, and other natural barriers to the progress of tanks. Also an energetic enemy will create artificial obstacles which will impede the progress of tanks and require time and effort to overcome them.

Therefore the organization of the forces for the future war must be the subject of paramount consideration. To permit this subject to be approached from the viewpoint of the arms and branches demanding the special consideration of their peculiar powers is to be lost in the fog of conservatism. No organization can be made up in that way. Colonel Fuller has again done a great service in his clear cut description of "Thinking in Functions." Indeed the illustration of the carpenter with his tool chest is a most pertinent and happy one. We do not need to follow this to the conclusions which he sets forth, for he is the "grand standard bearer" of the tanks —and falls into the pit he has dug for the proponents of the older arms.

We cannot subscribe to the view of a tank or mechanical army. We can advocate in and out of season, the development of tanks, and their assembly in ever-increasing number in the armies of the future. The fighting units of such an army will be composed of such organizations and in such strengths and with such material as will best fit them for the missions which they are to accomplish. The developments in the army of the future will be a harmonious assembly of power and mobility with the enlightened personnel capable of obtaining the utmost out of the organization.

To go back to the homely illustration used by Colonel Fuller. No carpenter worthy of the name has ever had invented for him a universal tool capable of doing all the things a carpenter needs to do, even on a very simple job. So the nation and the military men in it are going to devise a kit of tools for the boss "military carpenter" which will serve him on the jobs which he is called upon to attempt. No one tool can possibly serve in all situations and under all conditions where he is called to operate. But if the military kit is properly composed it will hammer, bore, cut, pull, stick and push under all the conditions of terrain, climate, weather and the hazards of nature which it may encounter. Only by the study of the powers and limitations of the men, weapons, and mechanical devices, placed at our disposal can we arrive at a solution of this question of organization.

Colonel Fuller does great service when he points out the necessities of the Infantry of the future. On terrain where it, and it only can be used it will have to be of the very highest type. No Infantry worthy of the name ought to be countenanced except that kind. It will still belong to that honored fraternity when it handles tanks or machine guns and we must see to it that we develop the men, the weapons and the mechanical means to keep it the "Queen of Battles."

By Lieut. Col. P. S. Bond, C. E.
Member of Faculty,
the Infantry School

THE author says that the influence of petrol-power has not been appreciated. It is appreciated by no one less

than the author of this article. He does not even mention the principal use of petrol-power,—which was to mass great numbers of soldiers with their needed supplies promptly at the decisive points. If there were no soldiers what would artillery shoot at and what would tanks attack?

Steam-power and water-power and petrol-power have enabled the hand and brain of man to accomplish more than ever, but they have not replaced them, either in peace or in war. The hand and brain are busier than ever guiding and operating the machines they have created. But no machine that ever was or ever will be invented by man can ever take the place of the marvelous hand guided by the cunning brain. God invented these, and no machine can ever become superior to them or a substitute for them.

We must indeed supplement the brain-driven hand of man by every form of mechanical power, but we must not be run away with by any idea that these things can *replace* the hand. The hand remains the most efficient of all devices, and even one automobile to every inhabitant will never cause us willingly to give up our legs.

If you were to ask any intelligent carpenter which was his decisive tool he would say, "My hand." He can get along without any one of his tools, or replace them all by better tools, but without hands he is no longer a carpenter.

Of course mechanized arms will be more efficient in carrying out their functions than old immobile types. But their functions are to assist man-power and not to take its place. One might as sensibly say that water-power can take the place of factory operatives (men). This is absurd. Water-power merely enables the operatives to do more work. Ford cars are not made by inanimate power, but by live men.

If the Infantry is to operate in certain areas only, it is in those areas that the decision will take place.

By Major M. H. Thomlinson, Inf.
Chief, War Plans Section, Office Chief of Infantry

THE old saying that a prophet is not without honor save in his own country is hardly true of the distinguished author of the above article on tactics and mechanization. Since the World War Colonel Fuller has been a courageous pioneer in the direction of applying to war many of the inventions and developments that are made in industry in time of peace. One of his hobbies has been, and apparently still is, the tank. The British army today, in line with his theories, has made a more comprehensive and thorough trying-out of tanks, and has more modern, efficient, tanks in commission than has any other power. Therefore, it is with some trepidation that one undertakes to comment on an article by Colonel Fuller on his own specialty—the motorization of war machines. However, there are a few gaps in his armor and, with the hope that something may be gained by discussion, I venture to push into these gaps the bayonet that he seems to have abandoned.

The constituent parts of a military force perform four primary tactical functions, i. e., the reconnoitering function, the security or protective function, the offensive function, and the pursuing and destroying function. No one weapon, or branch of the serv-

ice, is held for use in the execution of one function to the exclusion of all the other functions. If this be done, there is economic waste and organization is therefore faulty. Rather, for example, the rifleman on horseback is used, as the situation demands, to reconnoiter, to protect, or to pursue. Do Colonel Fuller's four or five types of tanks fulfill these requirements? Do they possess characteristics that will permit of using them for two or more purposes without inviting heavy loss due to some defect such as unsuitable armor, inability to take cover from gun fire, limited radius of action, etc.?

Similarly, any system of organization that arbitrarily sets up motorized units for the plain, and muscle-borne units for the mountain, forest, and swamp, is bound to run into trouble. What is the line of demarcation between mountain and plain? How dense must the woods be to preclude tank action and, having determined this point, where do such woods exist? During the rainy season, does the open plain retain its classification as such or does it become a swamp? One of our basic rules for organization tells us that organization must be flexible, no one type of organization is suitable for all situations. This rule, based on the bitter experience of Braddock, Pakenham, and many other conservative soldiers, shows us plainly enough that we must not pin our whole scheme of war on the successful operation of motors. Let us advance in the direction of motorization, for therein lies increased mobility, but before we decide to abandon entirely the horse and the mule, let us estimate, as well as we may, the location of the next theater of operations, its topography, its covering, and its climatic conditions, and then determine its suitability for motors. Finally, as a precaution, check up with the industrial mobilization expert and see how long it will take to produce the motors, tractors, and caterpillars for a field army, equipped as Colonel Fuller appears to contemplate.

MOBILITY A VALUABLE ASSET

Mobility is a most valuable asset. Colonel Fuller's discussion of motorization, backed up as it is by the great strides in mechanical development that have been made by the British army since the war, serves to remind us that we are but little more mobile than we were on the eleventh of November, 1918, and the slight increase in mobility that has been made since that date is due to the casting aside of some of the old impedimenta rather than to the adoption of any new ideas on transportation. Infantrymen are deeply interested in all developments in the direction of increased mobility of the combatant branches and look forward with hopeful anticipation to the efforts of the technical branches along these lines. Some of the things that Infantrymen are looking forward to are high speed light tanks, or perhaps armored cars, that can assist in the reconnoitering, security, and pursuing functions; to a larger number of somewhat heavier tanks of considerable mobility that can bear a good part of the burden in offensive action; to a few light field pieces on self-propelled mounts that can be used to accompany the tanks when they go beyond the protection of less mobile artillery; to cross-country tractor-drawn or caterpillar supply vehicles that will relieve

the troops from the necessity of sticking to railroads and highways.

It is quite reasonable to look forward to completely motorized reinforced brigades—foot soldiers in cross-country trucks, machine guns, other auxiliary weapons, and accompanying artillery on self-propelled mounts—and provided with cross-country supply vehicles. But the contemplation of a completely motorized large force is another matter. The quantity of cars, caterpillars, tractors, and trucks involved in the motorization of an army is so great that we cannot expect to obtain them all in time of peace. In war there may be no time for the production of new machines. Are the vehicles made for commercial purposes suitable for war needs and is the production for peace requirements sufficient to meet the sudden demands of a major war?

The comparison of the Infantryman since the introduction of the tank with the Infantryman of the Middle Ages, prior to the introduction of gunpowder, seems to be an unhappy one. There is just one basic reason why the Infantryman of the Middle Ages held his unenviable position for so many generations and that reason does not exist today. That basic reason was the lack of invention and industrial progress. Armor had been known since the dawn of history. Obedience to the primitive instinct of self-preservation led to the perfection of armor until it became so heavy that the wearer was compelled to adopt a mount in order to retain his mobility. Only the rich could afford good armor and a mount. The foot soldier, compelled by poverty to wear poor armor or none, and compelled by the demands of mobility to make his armor and weapons light, fell an easy prey to his wealthy opponent. There was practically no industrial life in those days from which the soldier could draw ideas and machines, consequently the Infantry suffered for centuries until at last the development of gunpowder as a propellant for missiles forced the armored man from his horse, then impelled him to remove his armor in order to secure mobility, and finally compelled him to seek shelter in the same hole occupied by his recently despised comrade in arms.

Today, the industrial life of the world is a fertile field for the military man in search of new ideas and, in spite of the fact that the tank was a development of the late war, that war was not over before the technical men were well on their way toward the production of satisfactory counter-irritants for the tank. While it is true that the first appearance of the tank spread fear among its opponents on the ground, that fear did not last long and there is no further need for its existence. It is true that improvements in the tank will demand corresponding advances in the antitank weapons but that entails no great difficulty now that we know the general nature of the problem with which we are confronted.

As a side light on this discussion, it is interesting to speculate on the development of the World War had there been no insuperable obstacles on which the opponents could rest their flanks. Had the flanks been open, maneuver would have been free. Would the introduction of the tank have been necessary as a solution to the problem? Another thing to speculate on is the future relationship of the

tank to the machine gun. Under the siege conditions of the World War the assault against machine guns by unprotected men was so costly that tanks became necessary as a solution to the problem of how to conquer the machine guns without ruinous losses. Just now the tank has the machine gun at a serious disadvantage but when our machine guns are motorized and armored what can we look forward to as the next development?

By Maj. Merrill E. Spaulding, Inf.

Member of Faculty,
the Infantry School

WHEN an individual puts forth his opinion as to radical military developments, or his vision of what the next war is to be, the average military reader, schooled along past lines of thought, skims through the dissertation and complacently returns to his old ideas. Particularly would this appear to be true of the average American reader. Entering the World War in its later stages, we saw what we considered our basic military ideas vindicated without our having passed through the early stages which preceded their application. Influenced by the fortunate outcome, it would be but natural that we revert to our 1914 ideas and expose ourselves to the danger of being placed in the category of those Colonel Fuller considers to be living in a past age. To avoid such classification we should not lightly dismiss his ideas.

In the World War we did not pass through that long period, when the various expedients were resorted to, to break the deadlock. We did not feel the pressing necessity which brought about the demand for the tank. There was not brought home to us the need for conservation of man-power; we were not required to face the stupendous losses nor feel ourselves concerned with their replacement, nor did we receive the tremendous shock to our national morale which such losses meant. Few, if any, of us conceived of the tank in its great rôle, that of saving the lives of men. Finally, for us, the use of the tank was an incident. The total result of this is that we now find ourselves with an unstudied conception of the use and possibilities of tanks or mechanized warfare entirely different from that of the nations which first visualized the tank, brought it into operation and tested it on many battlefields. Briefly, we ignore the opinions of those most competent to speak. Of all nations, we are the one best situated to profit by the developments forecast by Colonel Fuller. With our vast number of automotive vehicles, with a nation schooled in their daily use, with the materials and facilities for rapid and extensive standardized output, we of all nations are in a position to reach forward and grasp this newer phase of military development.

To any thoughtful individual, Colonel Fuller's article plainly presents the question of whether we shall study and investigate the possibilities of mechanical warfare which he presents or whether we shall continue, as we are at present, to loiter sleepily in the past.

What Will the Infantry Wear?

By *Major* L. D. Davis, *3d Infantry*

THE front cover drawing which appeared on the December issue of the INFANTRY JOURNAL reminded us that once we had a corps of Light Infantry. Of its conduct in the Revolutionary War we are told that at Stony Point, "this corps made the successful attack with *unloaded muskets* and captured the redoubts at the point of the bayonet," and that at Yorktown, "again the attack was made with *unloaded muskets*. By the bayonet they took their objective." (Italics are mine.)

It can't be denied that unloaded muskets in the situations described may have had some disadvantages, yet, on the other hand, there was no hindrance of ammunition bandoleers. It might have been that the enemy carried muskets without ball, and no bayonet at all. But that is an assumption that makes for such a belittlement of the exploits of the Light Infantry Corps as to be grossly unwarranted. Nor is it, for my illustration, necessary to assume that the enemy were any but of their best equipped and armed.

It is a physical phenomenon that you cannot close with the enemy except by movement, and it is another that when you stop to fire you have ceased to move. It is not improbable that had the troops of the Light Infantry Corps been supplied with filled cartridge boxes they never would have gotten up to the redoubts. As it was, with no ammunition to shoot there was no excuse to stop, and they had no decent alternative to going forward.

The illuminating thing to us is, that in the kaleidoscope of the Revolutionary War, the Light Infantry Corps appears frequently making a successful close-up attack. One wonders what the kaleidoscope, given the latest of modern insides, would show. It would, of course, be much more varicolored and its designs far more complex, perhaps complicated. The Infantry would be there, but no light Infantry. The rifleman with his gas-mask, camouflage material, and other miscellany, totaling close to 70 pounds, and the Infantrymen with their caliber .50 machine guns and 75-mm. mortars, could not, at best, be termed anything less weighty than heavy Infantry. That other portion of the Infantry, the tanks, would naturally be designated the Heavier Infantry Corps. In this picture there could be found only a trace of suggestion that Infantry had any need of facility of movement.

> **The Infantry's job is of such stuff as to make silly any attempt to adorn it with encumbrances, despite the tendency toward mechanization**

The kaleidoscope has none of the properties of the crystal and our visual images, even if fanciful, would at least be concerned only with familiar things. We may properly speculate as to their development during the coming few years, but as all informed military persons know, war is too prac-

tical an affair for those in charge to project the ways and means much in advance of demonstrated reliableness of matériel.

We do know now that Infantry must have protection from the fire of guns more powerful than any heretofore used, that it must be defended against attacks from the air, and that it must be able to fight for hours in gassed atmosphere. We also know that Infantry in carrying out its business of closing with the enemy will never require any less fire support, but more, and lots more; and no argument about it.

THE SOLUTION IS A COMPROMISE

If the problem, as stated here, seems simple, the answer is not reached simply. The solution, like that of most problems outside the arithmetic book, must be something of a compromise, and compromises seldom are completely satisfactory. Merely to give an answer one might say that to secure protection from powerful long range guns, it is only necessary to have similar guns in larger quantities; that a superior air corps would provide reasonable protection against the hostile air force, and augmented by antiaircraft weapons, would practically insure safety; that the ability to fight in gas may be given by providing gas masks and other neutralizing equipment, and training in their use. If the Infantry in attack needs more fire support, give it to them—that's easy (meaning the answer).

There are variations to this answer. We might secure protection from long-range guns by being careful to supply ourselves with guns of longer range firing larger sized ammunition. Protection from the air may be had by use of camouflage, of cover, of very open formations. If you please, other variations could be put down, and all sorts of combinations then arranged.

So far as Infantry is concerned the high hurdle is reached when the discussion takes up the matter of fire support. Shall the Infantry be furnished fire support in kind, or shall it be supplied the means and given a free rein? The .50-caliber machine gun is designed for antiaircraft work and for use against tanks; it has shown its worth for these purposes. But who's to operate it: the Infantry, the antiaircraft artillery, the Field Artillery? Or all of these?

The armament of any corps or arm should be based, in theory at least, upon the intended use for which such corps or arm is destined, and upon the manner in which it is to perform in that use. The rôle of Infantry, as of other arms, broadly divides into offensive and defensive, and while our teaching stresses—indeed, aims to indoctrinate—the spirit of the offensive, nevertheless the other is not ignored. I doubt that in any other arm is there so much difference in the technique of the two divisions; and certainly as to none of the others does the phrase "offensive and defensive," used descriptively, imply quite so nicely this difference.

THE OFFENSE AND THE DEFENSE

It does not matter that the defensive is assumed temporarily; it's enough that it is assumed. For the Infantryman on the defense not only are there physical changes in the manner of his performance, but a new mental attitude. My conception of the

airman's attitude and action is that he realizes no fundamental change. And to the artilleryman the apparent distinctions are mostly nebulous. I am sure that both the airman and ground artilleryman could carry on their strafing most excellently, and yet be ignorant of whether it was what the book calls offensive or defensive. I cannot picture even the dumbest Infantryman long being in doubt whether his platoon is attacking or defending.

MOBILITY AND FIRE POWER

Now this difference in the method of action adds measurably to the difficulties of choosing armament for Infantry. If we had Infantry whose sole business was to take care of the defensive we should give them lots of machine guns, calibers .30 and .50, and only a very few rifles. Protection against attack from the air will require wide open deployment, and this will cause an increase in the number of high angle fire weapons to cover ground defiladed as to machine gun fire. Consequently this Infantry would be well equipped with 75-mm. howitzers. This Infantry might be given the designation of Defense Infantry. It is obvious that mobility is here sacrificed for fire power.

Infantry armed as that just described has drawbacks when it comes to counterattacking, or launching any offensive. If it is admitted that the offensive connotes the forward movement of personnel, then in our example every machine gun and mortar is a drawback. If we had Infantry whose sole business was to attack we should give them rifles mostly, and only a few machine guns, and less mortars. We should want these Infantrymen unweighted and unhampered with matériel which required them to play pack animal. We should want a group who were free to go forward on their own guts, supported by the fire power of ground artillery, of air artillery, and of the Defense Infantry Corps. This Infantry might be designated Attack Infantry. In its characteristics it is plain that mobility has squeezed out fire power. But the importance of fire power is not questioned. Because we do not give the Quartermaster Corps big guns is not to admit that fire power is worthless; we don't let them have it because we want them to have both hands on their own toys.

Like the Quartermaster Corps, the others are generally easy to decide about. The artillery only have to worry about recoils, multiple trails, kinds of fuses; they are able to keep remarkably free from mixing up with disagreeable questions about what the man is to pack. But in the Infantry it's another story.

It seems to be in the nature of Infantry that it can use rifles, machine guns, and bigger guns. At least the Infantry is in a place on the ground which permits of the use of these, and there is an accepted ability to do pretty much what mules and motors ought to do.

SELECTION OF INFANTRY WEAPONS

When it comes to the question of selecting Infantry arms the rule usually laid down is that the Infantry should possess, or at least control, all the *immediate* fire power necessary to enable it to advance. It should be remarked that by control is meant nothing less than temporary possession, for any less degree of control on the battle-

field would approach closely to nullity. No other meaning may be given to it. But with the word immediate, it is not so clear what the meaning is. Is it used in the sense of without intermediary? Or is it used in the sense of having to do with space and time, suggesting that the means for providing fire power are at hand, as well as that the target is of present menace? What does immediate mean?

ARTILLERY SUPPORT FOR INFANTRY

There is nowhere any hint that Infantry shall not need artillery support; it is expected that Infantry will have frequently to call upon the artillery for fire when its advance is stopped and all its own means prove insufficient. If this artillery is "supporting"—not "attached"—then it is not a source of immediate fire power in the first sense of the word. But this artillery may, as many actual incidents have shown, respond more quickly and accurately than some Infantry weapon, say, the mortars. In the second sense of the word our artillery is immediate fire power. Now this fire power has been necessary to enable the Infantry to advance, yet it is fire power certainly not possessed by the Infantry, nor even fully controlled because with "supporting artillery" the Infantry commander concerned only requests, never orders. In the future it is quite likely that very often hostile resistance will be most quickly and thoroughly overcome by help of aircraft; occasionally, perhaps, only by this means, as where the Infantry advance was stopped by enemy air forces.

The recent development of the caliber .50 machine gun with its capabilities as a weapon against aircraft and tanks has raised the question of whether or not it should be included in the Infantry as an organic weapon. Well, nobody knows better than an Infantryman that the Infantry want to be protected from both, and the real doughboy's first thought is that if this protection is to be furnished by some other corps on call from the Infantry, it will not always be forthcoming; which should dispose of all arguments why Infantry should not itself have the weapon. However, another thought and he is reminded that he does not especially hanker after artillery shelling, and only insists that his own artillery put a quick stop to it. There is nothing here to indicate where the line should be drawn between what the Infantry should and shouldn't have in the way of weapons.

It has been intimated that perhaps the Infantry has not heretofore had all the immediate fire power necessary to enable it to advance, if only that over which Infantry commanders have authority be counted. I wish now to suggest that it is not, after all, indispensable to Infantry tactics that it possess this fire power. The best defense against hostile artillery is counterbattery; the best defense against aircraft is aircraft—air antiaircraft protection, it might be termed. Ground antiaircraft protection will be valuable, but no one would say that this provides protection equal to that procurable through counter aircraft.

THE PICTURE

We now have a background on which to throw a picture. You may not like the background but withhold comment until the picture is put on. For this picture neither the kaleidoscope or

crystal will be used; it is not that kind of a picture, being neither fanciful or prophetic. In the language of the day, visualize the sky clouded with enemy planes busily attacking, bombing, just plain annoying, our advancing Infantry. No friendly aircraft are in the sky, or perhaps a few may be off on the far horizon, well advised to stay there. Our Infantry is taking cover, the antiaircraft weapons of the Infantry, bolder and well camouflaged, are "sieving" the sky. But the advance is stopped. A wait, and then appear great numbers of friendly planes; the hostile air force retires; our Infantry slowly get forward again.

Surely that is not overpainted, nor is more imagination required than for a Leavenworth or Benning battle. Now use your imagination and say whether this Infantry needed *immediate* fire power or some other kind. But we quibble, for when Infantry needs any fire power to get it forward, it needs immediate fire power. The serious thing is, not that Infantry is stopped by hostile aircraft, or by guns miles to the rear, or by fire from the enemy front line, but that it is stopped. And the important thing is that it get on the move again, not where the fire power that makes it possible comes from. Would it not be better to determine what weapons the Infantry should have on some other basis than solely that expressed in what is almost an undefinable shibboleth?

In truth no formula may be found that could unerringly be followed in this matter of Infantry armament. If the Infantry is to preserve to itself in the future something more than its name, then it must now and always keep in mind its function on the battlefield. That function has always been the part of some group or corps, and when Infantry becomes too artillerized some new corps will perform it, and small recompense will there be in the question, "What's in a name?"

VICTORY DEPENDS ON INFANTRY

"The next war, should it come, might start the same as did the War in 1914," said General Summerall in a recent address, and continued, "But it will change. One thing, however, will never change. Victory will finally depend upon Infantry troops. It is the only branch which can cross and penetrate the enemy lines . . . the Infantry will be required to gain the enemy lines, take the prisoners and seize the guns." That is a statement of the function I have mentioned.

At present the Infantry may not be too much equipped with "little artillery," but the drift in that direction presents an interesting aspect. The increase in caliber size, in numbers, even though of respectable proportion, are not now matters of so much importance as is contemplation of our course, with its resulting effects upon the psychological attitude of the Infantryman. What I mean is that artillery quite properly stops to fire, but Infantry must stop only when there is nothing ahead of them.

The tendency in many armies is toward an increase in the fire power of the Infantry, but it is not always clear just what the reasons behind it are. In the German it may be that the lack of artillery has something to do with it; in the Japanese it is quite likely that the absence of a real understanding as to the capabilities of Infantry-Artillery teamwork is at the bottom

of it, for there is surely little appreciation of the intimate functioning of these two arms yet in evidence; and in the French it may be the whatever-it-was that made them lay such store by the Chauchat. In the French army this artillerization of the Infantry fits in very well with their method of attack with limited objectives, and, indeed, it appears that among the reasons for attacking with limited objectives is one that recognizes that time must be given to let the machine guns and 37-mm's get forward, as well as the field artillery, to establish continued support for the Infantry. An attack with limited objectives is fundamentally wrong, except under particular conditions when it should be handled strictly as a special case. And in any attack something is wrong when Infantry must wait while any of these weapons are getting up.

SUPPORT FROM AIR FORCES

Captain Allen in an article, "Rôle of the Machine Gun," in the March number of the INFANTRY JOURNAL, discusses the methods being used by certain European armies to secure greater fire. He states that European armies expect their own artillery and heavy machine guns to render the hostile Infantry ineffective up to the time when their own Infantry have arrived within a few hundred yards, say 300 or 400; and that over this remaining distance the Infantry have got to furnish their own fire support in whatever quantity is necessary to maintain superiority over the enemy front line Infantry. They assume that a large volume of fire will be needed for this final stage. It should be noted right here that no mention is made of fire support given by the air forces. Regardless of whether or not this assistance is counted upon, I am quite certain that *our Infantry* in the next war will move to the attack with the support of aircraft arranged for in no less a matter of course way than artillery support is now handled. If we should have any reasonable margin of superiority in the air, our Infantry not only will be receiving this additional support through the early stages, but also at the crucial period of the assault, when for safety's sake our own artillery and machine gun fire have lifted.

This large volume of fire required during the last few hundred yards is secured in the French and German armies, as described by Captain Allen, by the substitution of a line of small groups of men, each with an automatic weapon, for what we know as the skirmish line. The automatic weapon, while light in weight, must be capable of delivering considerable fire; the additional men in these groups are chiefly to carry ammunition for the weapon, and to provide close protection for it.

Now, if we admit that this formation develops great fire power, that it secures fire superiority and keeps the hostile Infantry low in his trenches, there still remains an important question to be answered: where are the men (what we call Infantry) who are going forward to deliver the assault, and capture the hostile position, and put the enemy to rout? Perhaps they expect the ammunition carriers, after bringing up a plentiful supply thereof, to be conveniently converted on the spot into shock troops.

Before leaving these European armies I cannot resist making a com-

ment concerning the Infantry platoon ammunition cart, animal drawn, the presence of which was observed at the recent autumn maneuvers of the German army. Of course with their large equipment of light machine guns some such way of hauling ammunition had to be adopted, no doubt. If ammunition is to be turned over to Infantry platoons well to the rear, the carts, in one respect at least, are nothing less than a Godsend. But if the Infantry are not going to use much ammunition until they are within a quarter of a mile of the enemy, by which time it is to be supposed that the hostile fire is so heavy that the Infantry are unable to advance, it takes a German to figure how a nice target of the size of a cart and its animals is going to get up.

It is evident that everywhere the maintenance of fire superiority is the thing, and that the principle of movement is being crowded out by the principle of metal, which might be defined in these words, "decisively successful results are *only* obtained by showering the hostile positions with metal in the ratio of 2 for 1 received from the enemy."

It cannot be said strictly that we have ever yet given a complete test to the soundness of the proposition that Infantry should possess all the immediate fire power that may be necessary to secure uninterrupted advance. The weapons we have, and those that may hereafter be given to the Infantry, are of limited use without their ammunition. As our ammunition is supplied to us by outside agencies, we never have any more immediate fire power than they make possible.

In the discussion of where to draw the line as to what are proper Infantry weapons, and in what numbers, some one has pointed out that the disposition of the tanks suggests a method. It is observed that this peculiarly placed corps, being of the Infantry and yet not Infantry, has its principal tactical work in support of Infantry units. In practice the Infantry accept, no doubt gracefully, all the assistance that the tanks give, but the Infantry units certainly do not feel that when tanks fall out or drop behind, there is any call for them to heave to and give first aid. They take the assistance as a matter of course but have no responsibility that the tanks keep up; to act otherwise would be a clear case of putting the cart before the horse.

THE GLAMOR OF NEW WEAPONS

In a previous paragraph the statement was made that in the future Infantry would need more protection and fire support than ever before. One cannot imagine a column of Infantry on the march, day or night, that will not need protection against hostile aircraft. That protection has got to come mostly from our own air forces. Infantry deployed on the offense or defense will similarly be defended against air attack. In all these instances this protection will be had through the action of friendly aircraft, assigned specifically that very mission, and supplemented by the support of ground antiaircraft units, likewise assigned these definite missions. Infantry will take this protection as a routine, exactly as it takes its supply of rations.

In bringing this article to a close, I will say again, that if any reader has drawn the conclusion that this is an

argument for doing away with all Infantry weapons except the rifle, either he has misread or I have frightfully balled up my phrases. I have written to point out what is really a very apparent tendency in our line of drift, and to intimate modestly that the Infantry's job is of such stuff as to make silly any attempt to adorn it with encumbrances.

It may be that in this age of machinery we are unconsciously intrigued by the glamor of new complicated weapons, by the mysteries of indirect laying and suchlike things; cozening ourselves by thinking we become more technical, when really all we do, perhaps, is become mere mechanicians at the expense of turning good Infantrymen into half-baked artillerymen.

Unprepared America on the Brink of a Volcano

THE trend of events in the Far East shows unmistakable signs that the world is on the verge of an epochal struggle. Proofs are at hand that the latest phase of China's civil war is due to the machinations of Russia. From the Cantonese leaders we have the declaration that China is to be the base of a world revolution, while from Moscow comes the statement that Russia is the Western front. There is jubilation in the Soviet country over the recent development in the Far East, while plans are going forward to overthrow the existing governments in so-called capitalistic countries.

No man is competent to say what will be the result of this Communistic scheming, but that the danger is grave no thinking person should doubt. A war arraying the 400,000,000 people of China and the 150,000,000 people of Russia against the Western world would be more terrible than any struggle the world has ever seen. It would overshadow the invasion of Europe by the Asiatic hordes in the ancient times, the westward march of the Mohammedans, or the struggle of the Central European Powers against the Allies in the World War. And America is sitting on the edge of this volcano blissfully oblivious of the peril and wholly unprepared. Should another world war afflict the earth, America could not avoid its terrible consequences, yet we continue to live in a fool's paradise.

America, with more than half the gold supply of the world, would make rich picking for the hungry hordes from the Far East. Our wealth is estimated at $350,000,000,000. We produce more and use more of the basic commodities than all the rest of the world put together. This country is a treasure house which would be looted as thoroughly as some of the cities of China have been pillaged of late.

Is America, in the light of the latest menace from the Old World, to persist in its folly? Are we to sit twiddling our thumbs while the hordes from Asia and Eastern Europe prepare to reduce us to their level of existence? Are we to wait until the blow falls before we make ready to guard our shores? Let's not again be caught unprepared as we were in 1917, and in every other war we ever had. Let an aroused public opinion force our leaders in Congress to make provision for our safety. Let's read the plain warning from Asia, and make our plans accordingly. —*Seattle Times.*

Firearms and Early Tactics

By *Captain* Stuart R. Carswell, *Infantry*

THE purpose of this article is to trace rather briefly the tactical changes in medieval warfare caused by the introduction of firearms. It is desired to show how the improvements in cannon and hand firearms influenced the tactical methods of each period.

Man in his crudest state has always desired and preferred a missile weapon and he early came to use some form of a projectile. Early weapons were crude and their use necessitated hand-to-hand fighting with consequent disagreeable results to the weaker party. Due to the weapons used and a lack of knowledge of surgery, nearly all wounds inflicted meant death. As a consequence man early learned to dread close in-fighting, and he has always sought a weapon with which he could inflict death on an enemy from a distance.

Our prehistoric man was forced to go to the nearby rock pile for his missile weapons and his later descendants gradually developed the spear, javelin, slingshot, and finally the bow and arrow. With the invention of the bow, man had by far his most effective weapon, and it exerted great influence on his methods of fighting. The development of the bow varied greatly in different countries and among different peoples. Its effectiveness of course corresponded to its degree of development. The English archer really developed the bow to its greatest efficiency and he was probably the most deadly opponent of his age. The English archer and his cloth yard shaft practically won the battles of Poitiers, Creey and Agincourt (1346, 1356, 1415).

The development of the cross bow was contemporary with the English archer, 13th to 15th Century, and it was used almost exclusively in Western Europe. The cross bow was accurate at short ranges, very slow to fire, for its spring had to be wound up after each discharge, but it was effective, and it played a prominent part in the warfare of this period.

> Cavalry was supreme in battle in the Middle Ages, but with the development of firearms Infantry became the dominant weapon, and remains the Queen of Battles

Changes in man's style and methods of fighting have always been caused by an improvement in the weapons. It is an age old truth that improvements in weapons will always be met with an adequate defense. Consequently improved weapons brought new formations, new combat methods and finally came the division of armies into Cavalry, Infantry and Artillery. Probably the appearance of the horse on the battlefield brought about the first great tactical change. With the horse came the division into Cavalry and Infantry, and a time quickly came when only the rich or the

EDITOR'S NOTE—Plates used in this article are from "Story of Modern Progress" by W. M. West, published by Allyn and Bacon, and used by their permission.

nobility could be mounted. The poorer or lower classes thus had to fight on foot and they became the much despised Infantry.

DECLINE OF INFANTRY

From the time of the first Roman Emperors, Infantry began to decline in importance. With the invention of stirrups cavalry increased enormously

A 16th Century Bombard

At Crecy the English had some small "bombards," which, "with fire and noise like God's thunder, threw little iron balls *to frighten the horses.*" These first cannon were made by fastening bars of iron together with hoops; and the powder was very weak. Later they were used to batter down castles and city walls.

in importance and fighting ability. Before 476, A. D., the Roman Infantry was distinctly inferior to the Roman Cavalry. After 476, A. D., Cavalry was the only important arm in Western Europe, though among the Byzantines the Infantry still held an important part. All through the Dark and Middle Ages cavalry reigned supreme and formed the backbone of the army. By the time of the late Middle Ages the armament and tactics of Cavalry and Infantry was radically different. The knight or man-at-arms was clad completely in mail or armor. The footman was generally without protection save for a leathern or woolen padded coat. He had little confidence in himself and was held in general contempt by the mounted man. The Infantry of this period usually put up a very poor fight and were never reliable. They generally held aloof from the battle until they saw which way the victory would go. They flew at the first sign of defeat as they were ruthlessly massacred when caught, for the footman had no ransom value like the man-at-arms. This was the general condition when firearms were brought on the battlefield to meet armor and lances, axes and bows.

In the first half of the 14th Century when firearms first appeared, the armored knight was supreme on the battlefield. But at about this time Infantry had begun to be valued, and became more and more an important part of the army. It had been learned in the constant wars of the Middle Ages that Infantry with cohesion, discipline and good armament were valuable aids to the mounted man. The Swiss Infantry, fighting fiercely in defense of their freedom, had taught the Chivalry of Europe many bitter lessons which were slowly absorbed.

ARTILLERY APPEARS

A new element now made its appearance on the battlefield—artillery—and with its introduction in war the importance of the armored knight slowly diminished. The Infantry now began to regain its importance. The last half

of the 14th Century saw a gradual improvement in firearms, and by the beginning of the 15th, considerable progress had been made. The barrel, at first short, had now been lengthened and a framework on which it could be worked was perfected so that it was capable of direct fire. Previous to this it had been necessary to use high angle fire.

Ziska, the blind Bohemian leader, created a radical change in battle tactics. He invented the "wagonbourg," or rampart of wagons. Behind this rampart he placed his line of battle while his guns and mortars were placed on the ramparts for vertical fire. This was a defensive method only, and the cavalry were kept out of the action until the attack was broken up. Then the cavalry came from behind the ramparts and hurled itself on the beaten enemy.

Until the close of the 15th Century firearms were carried only on wagons. During the latter part of this century many improvements were made in the artillery, both in barrels and carriages. The invention of iron shot made it vastly more effective and the wagon ramparts were so easily destroyed that they were quickly abandoned. The improved carriage now allowed the gun to accompany the army on the march.

Siege of a Medieval Town
The summons to surrender being delivered in writing

INFANTRY'S IMPORTANCE INCREASES

The Swiss were by far the best Infantry in Europe during this period. They early made a name for themselves by their ferocity and courage and repeatedly inflicted severe defeats on the Austrian and Burgundian armies. Their principal weapons were long spears, halberds and swords. They were habitually formed in a dense mass with the front ranks protected by armor. During the 14th Century the Swiss had astonished Europe by winning three great victories over the Austrians and Burgundians at Morganten in 1315, Laupen, 1339, and Sempach, 1389. By the end of the 14th Century the fame of the Swiss soldier had spread all over Europe and he was eagerly sought after as a mercenary. So we now find the Swiss soldier fighting on all the battlefields of Europe. His fame became so great that no army was considered complete without him. An old Zurich muster roll of 1444 gives us an idea of the armament of a levy of 2,770 men raised in that year. Three-fifths were armed with halberds, one-fifth with pikes and one-fifth with missile weapons, with most of the latter crossbows, though there were 61 hand

guns present. The Swiss Infantry was highly trained and disciplined, their training beginning when mere youths, because warfare was by now the national trade of the Swiss. The Swiss soldier was noted for his courage, strength and ferocity, and he took no prisoners unless he got a large ransom. The improved artillery was of advantage to the Swiss and they readily tried conclusions on the plain with the mounted man and they even took the offensive against him.

During the course of the 15th Century the small arm (fusil), had received very little improvement, and consequently had played a minor rôle in the warfare of the day. It was inaccurate, slow to load and its defensive value was thought little of. In fact it was considered of far less value than the bow.

The success of the Swiss Infantry in battle had inspired other nations to raise an Infantry as good as the Swiss. Among the countries that tried out the new Swiss tactics were the Germans who quickly won a name for themselves second only to the Swiss. The German Landsknects, or foot mercenaries, now appear as the rivals of the Swiss. Their armament consisted mainly of swords and pikes with a small percentage of firearms and halberds. They adopted wholly the tactics of the Swiss bands who, by 1500, were largely armed with the pike. During this whole period and before this, the French were never able to develop a good reliable Infantry. This was chiefly because the feudal laws were still in effect and the nobility were afraid to allow the lower classes to possess arms.

By 1500 the Spaniards had completed the reconquest of Spain and they could now give their undivided attention to their claims abroad. The 800 years of savage and relentless wars with the Moors had developed an Infantry of splendid character. Under the Great Cordoba the Spanish Infantry had their first contact with the Swiss in Italy. The Spaniards learned bitter lessons from the first defeats they suffered at the hands of the Swiss and they quickly adopted the arms and tactics of the Swiss. Previous to this the Spanish Infantry had simply carried a sword and shield and usually formed inside of a ring of wagons.

AT CLOSE OF FIFTEENTH CENTURY

Though artillery was still in a very rude state of development, the close of the 15th Century found in existence our three main arms of today—Infantry, Cavalry and Artillery. Due to the armament and the prevailing ideas of tactics, each of the arms was slow and ponderous in action. Nothing but the very simplest of maneuvers could be used on the battlefield.

The cavalry was encumbered with a heavy armor and had little maneuvering ability. Its tactical handling differed in different countries. The English in the 100 years war had forced the French cavalry to dismount and fight on foot with their Infantry. The French cavalry really preferred to fight mounted on an extended front and there were generally more than two lines of battle. On the other hand the German cavalry were formed in deep solid bodies.

At the opening of the 16th Century the heavy cavalry was still the principal arm, though the importance of the Infantry was increasing rapidly due to

the influence of the Swiss and German Infantry. Both the Swiss and the Germans fought in heavy masses and were considered an important part of the army. They were habitually formed into three divisions each with a small body of cavalry attached. In forming for battle these divisions were posted close together with the cavalry on the flanks of the whole mass.

THE FIRST INFANTRY REGIMENT

When the Italian Wars began at the opening of the 16th Century, the musketeers formed a small proportion of the mass of Infantry. The Swiss rarely had more than 20 per cent of firearms. Generally three or four ranks of musketeers (arquebusiers) covered the front and flanks of the mass of pikemen. When the cavalry charged home the musketeers had to rush for shelter behind the pikemen. The arquebus was still very crude, being slow to load, inaccurate and having a very short barrel. Neither the Cavalry or Infantry had as yet been formed into regiments, though that time was only a few years away, for the famed bands of Picardy were in 1524 formed into a regiment and became the senior regiment of the old French line.

During this period the artillery was generally posted close around the squares. Only the lightest of calibers could be taken into the field, for the heavy and medium guns could only be moved with difficulty. The artillery used in the field was generally falcunettes and large arquebuses mounted on wheels. At Ravenna in 1512, the artillery for the first time played a decisive rôle in battle.

At the end of the 15th Century the military organization consisted of a number of conflicting elements. The heavily armored Cavalry and the massed Infantry were opposed to an Artillery that was constantly improving. The Cavalry had to retain its armor on account of the Infantry and the Infantry had to keep its deep formation to meet the Cavalry charge.

The beginning of the 16th Century saw the modern states of Europe taking their present form with strong royal governments. These governments needed more highly disciplined and organized armies capable of long service abroad. The Swiss had shown that good Infantry could win battles, and the comparative cheapness of Infantry induced all countries to try and obtain troops like the Swiss.

The use of Infantry firearms was rapidly spreading and the Spaniards quickly adopted and improved them. This development of firearms, especially of artillery, was detrimental to the shock tactics of the Swiss and the Spaniards, due to their improved guns and powder, now had the best Infantry in Europe. By 1520 they had developed the musket and a portable fork. This gun was six feet long and weighed 15 pounds.

FIREARMS DEVELOPED

The French had already generally adopted firearms, though they were looked on with considerable disfavor by many of the old soldiers. Montluc spoke of them as "the Devil's invention to make us murder one another," and he "wished to God that this accursed engine had never been invented."

As already mentioned, the bands of mercenaries under captains now began to be grouped into regiments under a captain general or colonel. There was

no standard organization for regiments. Their strength varied greatly both in the number of companies and in men. One regiment raised in 1526 consisted of 35 companies of 12,000 men. The regiment was merely an administrative unit. The battalion was the tactical unit and consisted of the pikemen of a number of companies formed into a square. Very large squares were generally due to a fear of cavalry. In his Turkish campaign of 1532, Charles V formed his 70,000 pikemen into three great squares. These great squares were hard to move and handle, especially in broken country. Artillery playing on these dense masses could inflict great damage on them as was shown at St. Quentin (1557).

INFLUENCE OF TERRAIN

The terrain had great influence in deciding the fate of battles and good positions were eagerly sought for. The heavy armament, deep formations and the clumsy artillery of the time practically forbade an attack over difficult ground. The strength of the artillery was about one gun to every thousand men.

The end of the 16th Century saw the hand gun largely replacing the pike, the proportion gradually rising to three-fifths muskets. Most of the musketeers were used as skirmishers and operated in separate bodies. The clumsy solid mass of pikemen was slowly changed to a hollow formation in order to make it more flexible. The sides were formed of separate battallions and as the size of these squares diminished the flank battalions were drawn together and finally grew into a second division, used either to extend the line or as a second line. The rear battalions became a third line. It was thus found that a hollow square formation was no longer needed.

The Dutch War of Independence really ended with the truce of 1609. Due to the conditions under which the war was fought the Infantry had played the leading rôle and its fire power had undergone a rapid development. Infantry now became the principal arm and the importance of cavalry continued to dwindle. The proportion of cavalry was now about one to five or six foot soldiers. The Thirty Years War saw a much larger employment of cavalry due to the use of mercenaries who had no base of supplies and who had to live on the country. This necessitated greater mobility which in turn required a great reduction in the weight of armor. Armor was now limited to back and breast plates and pot helmets.

The cavalry now came to use fire alone and forgot its shock tactics. The charge was made at a trot close up to the Infantry square when the troopers "carocolled"; that is, successive ranks fired, turned to the left and filed off to the rear to load again. When this fire had shaken the Infantry the Cavalry pushed in to engage had to hand. The musketeers kept up a slow unbroken fire by the same method of countermarching to the rear.

The artillery underwent a great improvement during the 16th Century. The number of calibers was reduced and the types standardized. During this period an attempt was made to bring on a gradual development of the fight and ao keep out a reserve. The musketeers began and bore the brunt of the action until at the right moment

the reserve of pikes was thrown in to decide the battle.

The idea of the successive deployment of the troops was tried out. To effect this, the size of the units had to be reduced. Maurice of Nassau was the first to realize this and to carry it out successfully. His regiments were reduced to 1,000 men formed into two battalions. His pikes were posted in the center with the musketeers on the flanks. He formed his battalions in ten ranks and with this new mobility he dealt successive blows.

Gustavus used only six ranks for Infantry and three for Cavalry. He lightened the gun and introduced the cartridge box. He further increased the number of his muskets to two-thirds the pikes. Gustavus massed his heavy guns in batteries whose fire he used to break up the enemy columns. He usually formed his army in two or three lines, but he used his first line to deal the decisive blow.

With the advent of Louis XIV on the scene he found 139 Infantry regiments in the French army. With few exceptions these were very poor. According to Sully "the men were enlisted by force and made to march by the sticks." The men hated foreign service and deserted whenever possible. As a result the French Infantry was never very reliable. Their cavalry was by far the best part of the army. In 1668 Louvois, Louis XIV's war minister, began the reorganization and disciplining of the French army. He began a system of inspections, which ended the neglect and fraud then prevalent, and insisted that the men be properly armed and clothed. This brought about the adoption of uniforms. By 1685 Louvois had built up the best army in Europe, though the Infantry was still inferior to the Dutch and English.

About the middle of the 17th Century, the practice of falling on a flank and crumpling it up had been introduced and Turenne became the best exponent of this idea. By the end of the 17th Century the attack had almost equalled the defense. Mass fire now began on the battlefield, and with the development of line tactics the skirmisher disappeared for over a century.

BAYONET REPLACES PIKE

The pike disappeared before the end of the 17th Century and the bayonet, first used by Puysegar in 1647, had taken its place. The new flint-lock musket now enabled Infantry to repel Cavalry without the need of the pikemen. The Infantry lost their shock power when they gave up the pike. The formation was now in long shallow lines to get the full development of fire power. Tactical bodies were created solely for fire power and which were incapable of independent action. Long thin lines, without intervals, were thus formed and which were unable to maneuver.

During the war of the Spanish Succession, 1702-13, the battles were mostly contests of order and discipline. The side which could take the heaviest punishment generally won the day. The order and cohesion under a heavy fire was the deciding factor.

A close study of the tactics of the day convinced Frederick the Great that superiority in discipline alone could not win battles. He quickly saw that the defenseless flanks of the line formations could be smashed by a quick concentration.

In the Seven Years War the Austrians met his rapid maneuvers and powerful artillery with a great increase in their own artillery and finally, by taking up such strong positions that Frederick could not fully use his maneuvering ability. Frederick developed the idea of using artillery in great batteries and then launching his Infantry attack under cover of the fire. He also created horse artillery to accompany his Infantry and Cavalry.

The brilliant results achieved by Frederick prevented any change in tactics until the advent of the French Revolution, though a strong party in France advocated the use of the column and skirmishers in place of the line. With the French Revolution the influence of the American War of Independence was shown by the reappearance of the skirmisher. The outbreak of the French Revolution ended the long period of medieval tactics and marked clearly the beginning of the modern tactical system. The inelastic and unwieldy tactics of the Frederician period speedily collapsed before the French skirmisher and columns of attack. The French Revolution made great tactical changes and upon these changes are based our present system of tactics.

The Value of the Hawaiian Defenses

WHATEVER plans may have been prepared for the fortification of the Philippines and Guam were abandoned by President Harding in 1922, at which time, as has been often remarked, Arthur Balfour won his spurs and rode to an earldom by sinking more battleships than Nelson sank in the battle of the Nile. England would not look with great favor upon the withdrawal of the United States forces in Hawaii, for she has no convenient islands on which to establish fortifications and naval bases to protect her Pacific dominions, and this fact alone may explain her willingness to sit in a new conference—to use her influence to prevent Uncle Sam from discarding from British strength when the deal is on.

California, Oregon and Washington are no more eager to become the first line of defense than are Canada, New Zealand and Australia. The protective base at Hawaii is the source of great assurance of security to Americans on the west coast and it must never be abandoned through any emotional sense of international righteousness in the generous breast of Uncle Sam. The drama of the world is moving into the theater of the Pacific Ocean. Already the stage hands are at work on the sets and the play is rehearsing. Hawaiian defenses are the birthright of America in this swiftly growing drama and the Pacific West must mount a zealous guard to make certain no foreign power shifts the scenery between acts. —*Los Angeles Times.*

The Tank in the World War

On the British Front in the Fall of 1918

By *Captain* George H. Rarey, *Infantry* (*Tanks*)

THE Battle of Amiens was the British contribution to the general offensive of 1918 which was initiated simultaneously by the British, French and American Armies in August of 1918, along their respective fronts at the direction of Marshal Foch.

After considering the British front, with a view of determining where the offensive should start, Sir Douglas Haig decided that the British attack should be delivered along a line extending from Albert to Montdidier, to the east of Amiens. The purpose of this action was to occupy a line, Hangest-Harbonniers-Mericourt and relieve the Paris-Amiens Railway from interference of the German lines, after which an advance was to be made to a line, Roye-Chaulnes and facilitate the advance of the French on a line, Noyon-Montdidier.

The troops placed at the disposal of the commander of the British Fourth Army for the accomplishment of this advance were:

Canadian Corps of 4 divisions. 4th Tank Brigade attached.
Australian Corps of 4 divisions. 5th Tank Brigade attached.
Third Corps of 2 divisions. 10th Tank Battalion attached.
General Reserve of 3 divisions. 9th Tank Battalion attached.
Cavalry Corps of 3 divisions. 3d Tank Brigade of two Whippet Tank Battalions attached.
82 Brigades of field artillery; 26 brigades of heavy artillery, and 13 batteries of heavy guns and howitzers.
17th Battalion of armored cars.
Eighth Aero Squadron attached to tank units as contact and counterattack patrols.

The accounts of this action differ as to the number of tanks engaged, but it was well over 600, divided as to type, as follows: 8 battalions of Mark V tanks, 2 battalions of Whippets, 2 battalions of the new Mark V Star tanks equipped to carry Infantry, and 5 companies of supply tanks, and converted gun-carriers, used as supply ships. In addition to these there were 42 tanks in mechanical reserve.

The Battle of Amiens, as it is called, was the second great battle in which the whole scheme of attack was dependent upon tanks.

A summary of instructions for the artillery is of interest in connection with the operations of the tanks. These instructions were:

a. No registration or bombardment prior to the advance.

b. The initial attack to be opened by a barrage at zero hour.

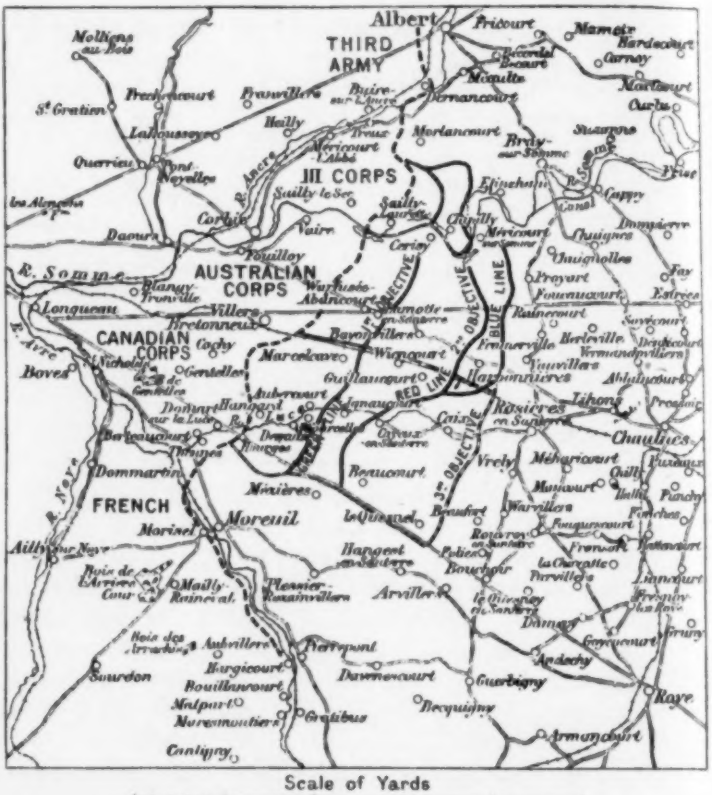
c. The majority of heavy guns and howitzers to concentrate on counter-battery work.

d. The field artillery brigades to be prepared to move forward and offer the closest support to the attacking Infantry.

EDITOR'S NOTE—This is the last of the series of articles which have been appearing in the INFANTRY JOURNAL for the past twelve months, reviewing the employment of British tanks. In subsequent issues it is proposed to publish reviews of the French, German and the American tanks in the World War.

e. Special noise barrages to cover the approach of the tanks.

The cavalry schedule is also interesting. The first object of the Cavalry Corps was to secure the old Amiens defense line and hold it until relieved by the Infantry. The second object was to push forward on the line, Roye - Chaulnes. For this purpose the 3d Cavalry Division, with one battalion of Whippet tanks, was attached to the Canadian Corps and one cavalry brigade with one company of Whippets was attached to the Canadian Corps. The advance of the cavalry divisions was to take place at zero plus four hours. Before the Red line (see map on this page) was reached, the cavalry scouts were to precede the Whippets and discover crossings over the Luce river at Ignaucourt and Demuin for use of the Whippets. The formation to be adopted, in this first attempt to use Whippet tanks with cavalry, was: One company of tanks in front of the cavalry as a screen, with 200 yards interval between tanks; one company in support and one company in reserve.



NOTE—Amiens is 4 miles northwest of Longueau.

The program of work for the airplane squadron on the first day of the action was as follows: Airplanes to fly over the line for the last hour of the tank approach march in order to drown the noise of the tank engines. Contact and counterattack patrols to keep tank units constantly informed, by dropping messages at fixed stations, as to the progress of the battle. All machines were instructed to help tanks whenever opportunity arose.

The 1st and 15th Tank Battalions

were equipped with 36 Mark V Star tanks each, one battalion being assigned to the Canadians and one to the Australians and arrangements were made for each of them to carry forward two Lewis and two Vickers machine gun crews to the Blue line for the purpose of assisting the cavalry.

The 17th Armored Car Battalion had just returned from a temporary attachment to the French army when it received orders to proceed to Senlis, and, having just entered this town, orders were received at 9 o'clock one morning to proceed forthwith to Amiens and report to the headquarters of the Australian Corps. Amiens, nearly 100 miles distant, was reached that night. The chief difficulty foreseen in an armored car attack in the Amiens area was the crossing of the trenches. The solution decided upon was the attachment of a small force of tanks to this battalion. The tanks were used to tow the cars across the trenches, an arrangement which proved very satisfactory. These cars were to be used as a harassing force in the development of the success.

RAPID PREPARATIONS MADE

Whereas a month had been used in preparing for the Battle of Cambrai, at Amiens all arrangements for reconnaissance, liaison, dumps (on a larger scale than ever before), and assembly of tanks had to be carried out in a little over one week. Thousands of gallons of gasoline and water, millions of rounds of ammunition and a great quantity of other supplies had to be brought up. It was during this great supply movement that a chance shot by the enemy artillery hit one of the supply ships and set it on fire while one of the supply companies was hid in an orchard north of Villers-Bretonneux. The enemy promptly started shelling this area and before the tanks could be moved, nearly the whole company of supply tanks with their loads had been destroyed. These tanks were loaded with explosives for the Infantry—gun-cotton, bombs, trench mortar shells, etc.—besides two complete fills of gasoline for each tank. Only two of these supply tanks were saved. All of the supplies destroyed had to be replaced and this was successfully accomplished by other supply ships before the zero hour.

THE ACTION BEGINS AUGUST 8

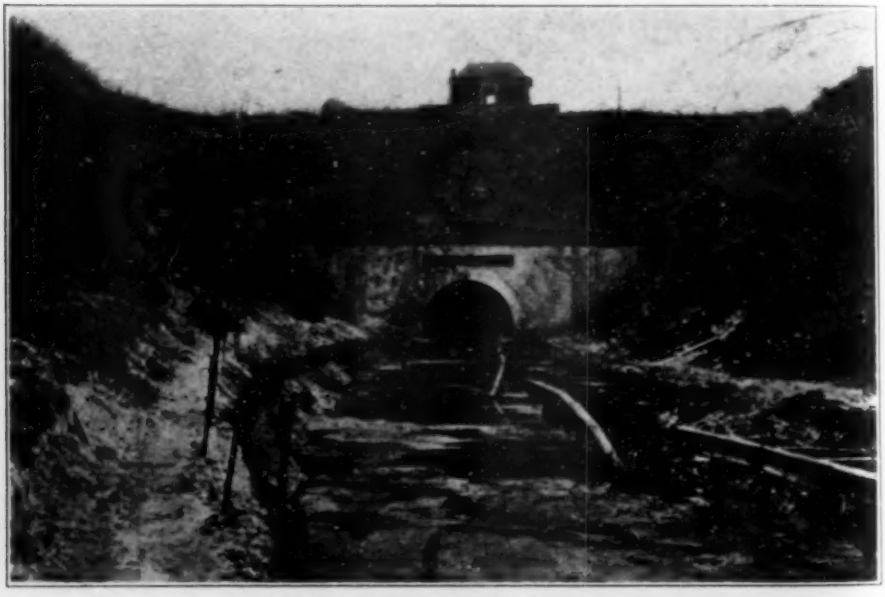
Zero hour was at 4.45 a. m., August 8, and for 25 minutes prior to this time, the artillery had been producing a noise barrage along the 11-mile front to drown the noise made by the approaching tanks. At zero hour 415 out of a total of 420 fighting tanks in the first wave went forward, meeting little resistance at the first line except for machine gun nests in the standing corn and other crops. The tanks hunted these nests and crushed them. Cooperation was good between both the Canadian and Australian troops and the tanks. On the Third Corps front a little confusion existed on account of the fact that the Germans had attacked that front two days before and the Third Corps had just succeeded in recapturing the most of their front on August 7.

South of the Somme, all objectives were taken on schedule time, and on the right flank, all tanks except two succeeded in crossing the Luce River. The cavalry and both battalions of

Whippets had considerable fighting to do near Cayeux wood, Le Quesnel, Mezieres, Guillaucourt, and South of Harbonnieres.

Three machines of the 8th Aero Squadron had left the ground at 2.50 a. m. and aided the approach march of the tanks by flying low over the lines, and they also dropped 25-pound bombs on the enemy lines. Four of the tank-contact patrol machines took off about 5 o'clock and by flying low and making use of the gaps in the mist, one of these machines was able to report that tanks had passed through Demuin and consequently it was known at headquarters that the bridge at this place must be intact. Many messages were dropped during the day, giving the exact location of the troops, as well as the location of German observation balloons, localities where the planes had dropped bombs, etc.

The method of cooperation between Infantry and tanks was adapted to the character of the terrain. Leaving the Infantry established on a crest, the tanks went forward and gained positions on the next ridge or crest, wiping out machine guns as they went and hunting them out along the crest. This enabled the Infantry to advance to the crest just occupied by tanks, when the tanks would advance again. On the right of the Australian Corps zone of advance, one company of tanks quickly placed their Infantry on their objective north of the main road. On the left, however, the tank company had trouble in leading its Infantry to their objective, on account of a field gun which was placed on high ground across the Somme River near Chipilly. This gun was in a position to enfilade the advance and it knocked out three tanks which caused the temporary withdrawal of the Infantry. By noon, however, the remaining tanks had con-



The St. Quentin Canal Tunnel at Bellicourt

ducted their Infantry to final positions of the first-phase objective.

The Canadians, on the right, advanced rapidly, but, due to the fog, the tanks lost direction and fought without regard to prescribed areas of action.

The Third Corps advance was not so rapid, as the confused conditions along their front at the beginning of the battle, and due to their partial failure, Chipilly ridge was held by the enemy for several days which permitted the field guns on this ridge to knock out a number of tanks during this first day of the battle.

A Veteran of the Somme

This Mark V Star British tank now stands on a concrete base on the high ground facing the entrance to Fort Benning, Ga., at the Upatoi bridge, and upon which is placed a copper plate containing this inscription: "On September 29, 1918, during the World War under the command of 2d Lieut. Claude E. Gass, this Tank attacked the Hindenberg Line with 301st Battalion Tank Corps in support of the attack of the 27th Division, A. E. F. near the enemy trench it received a direct hit and was put temporarily out of action. It was brought here by Co. B, 15th Tank Battalion"

The Whippets, cavalry and armored cars were to press on beyond the limits of the Infantry and heavy tank attack; the Whippets were to precede the cavalry, paving the way by dealing with machine guns and wire. Major Ellis states: "In practice, however, difficulty was found in maintaining touch with the cavalry owing to the impossibility of keeping up with the galloping horsemen on the one hand, and to the impossibility of a mounted advance in the face of a heavy machine gun fire on the other hand."

ACTION OF THE ARMORED CARS

The armored cars did some excellent work toward the close of this action and justified their existence. The Germans were retreating rapidly and these cars, advancing ahead of all other British units, were enabled to overtake the enemy on many occasions. One section chased German staff cars through the village of Foucaucourt. The air service obtained some excellent results in flying low over the enemy's congested roads. If the armored cars had been able to operate off the roads, their value as a harassing weapon would have been much greater. At Proyart the cars found the German troops at dinner; these they scattered in all directions. Moving westward they met masses of the enemy retreating from the Australian advance, who, in trying to escape from the machine guns of the armored cars, fled across country toward Chiugnolles only to be met by the armored cars which had proceeded to this village. Running

practice with their guns was obtained by several cars at lorries full of troops, supply trucks, etc. Although more than half of the cars were out of action by the evening of the 8th, there were no serious casualties among the personnel of this battalion.

The Mark V Star tanks reached the day's final objective and delivered their Infantry machine gunners on the line, per schedule, but owing to the heat and fumes inside the tank when it was closed, these gunners were not in condition to fight until they had been given several hours' rest. Evidently the fighting compartments were not properly exhausted.

THE FIRST DAY A GREAT SUCCESS

The Paris-Amiens railway had been completely disengaged and the first day's fighting was a great success. Upwards of 16,000 prisoners and 200 guns had been taken. The prisoners stated that the rapid advance of the tanks had rendered resistance useless. During the day 100 tanks had been put out of action, many of them being hit by shells fired from Chipilly ridge. The extreme heat of the day and the great distance covered had exhausted many crews, making it necessary to form composite companies for the next day, as few reserves remained. It will be remembered that only one battalion was held in reserve at the start.

On the evening of the 8th, orders were issued calling for the advance to be resumed on the 9th to a line: Roye-Chaulnes-Bray sur Somme-Dernancourt. The attack on the 9th was temporarily held up by machine gun fire from Chipilly, and, due to the steep hills and thick woods in this locality, this resistance was difficult to stamp out with tanks. Later in the day, however, the objectives were gained at a cost of five tanks. South of the Somme, the 4th and 5th Tank Brigade supported an attack on the line Framerville-Rosieres-Bouchoir with 89 tanks, five of which received direct hits near Lihons. In the fight around Framerville, only one tank of the 13 engaged was hit. The very close cooperation of the Infantry with the tanks at Framerville is credited with the preventing of more tank casualties; the Infantrymen picked off the enemy gunners as soon as the tanks came under their fire and the Infantry at this point was quick to take advantage of any opening made for them by the tanks. At Beaufort and Warvillers, the Whippets rendered great assistance to the Infantry by chasing the hostile machine gunners out of the crops and shooting them down as they ran. Thirty-nine of the 145 tanks which went into action on the 9th were hit by enemy artillery. As only about half of the distance scheduled for the 9th had been covered, the orders for the 10th directed that the advance on that day be continued to the same objectives outlined for the 9th.

The history of the 13th Tank Battalion mentions the very friendly relations existing between them and their battle partners, the Australians. The tanks of this battalion displayed on a painted board the colors of the Infantry they were supporting and one N. C. O. of this Infantry rode with each tank, as an observer. These observers were of great assistance in keeping touch with the Infantry and it is reported that they returned at night with a high opinion of the courage, endurance and efficiency of the

Tank Corps personnel. Several opportunities were found to use the tank weapons against the retreating enemy on this date. The Whippets and the cavalry were ordered to capture Parvillers but neither of them could reach this place owing to the old trench systems and broken nature of the ground. Of the 67 tanks engaged on the 10th, 30 received direct hits.

The only action of importance which occurred on the 11th, the last day of the battle, was the capture of Lihons by the Australians assisted by 10 tanks. Since the advance had now reached the old Somme area, which presented great difficulties to an advance, the British commander-in-chief decided that he would break off the battle to the south of the Somme and transfer the main effort to the north, in the direction of Bapaume.

THE LESSONS OF THE ACTION

Two important points are worthy of mention here. It will be noticed that as the number of tanks decreased during the advance, the territory covered by the British in a day's fighting also decreased. The other point is that the commander-in-chief was able to select the territory most favorable to him for the succeeding action, due to the fact that he had been able to use tanks in the beginning with which to dislodge the enemy from their prepared positions.

The Battle of Amiens had come to a close. Fully two-thirds of the tanks had been handed over to salvage and very few of the remainder were fit for service. A great physical and moral blow had been dealt the German army; they had lost 22,000 men as prisoners, a great many in killed and wounded, and 400 guns.

Col. J. C. F. Fuller states that the main lessons learned from this battle were:

The staying power of an attack lies in the general reserve. In the attack the tank general reserve was very weak, consequently, after August 8, the tank attacks began to peter out.

The *heavy tank* is an assault weapon. Once open warfare is entered upon Infantry must protect tanks from artillery fire. (Note: Colonel Fuller evidently means "artillery fire at short ranges." Infantry can occasionally do this if close touch is kept with the tanks.)

Neither the Mark V, nor the Whippet, have sufficient speed for open warfare.

Endurance in action of the heavy tanks, may at present, be put down as three days, after which they require overhaul.

The present supply tank is too slow and heavy; a light machine such as a cross-country tractor should replace it.

At present, wireless and airplane communication cannot be relied upon; the safest and simplest is by galloper.

Once preparations are well in progress it is almost impossible to modify them to meet any change in objective.

The attachment of tanks to cavalry is not a success; for, in this battle, each of these arms in many ways impeded rather than helped the other. During the approach marches the Whippets frequently were reported to have been unable to keep up with the rapid movements of the cavalry; during actual fighting the reverse took place. By noon on August 8, great confusion was developing behind the enemy's lines, and by this time the Whippets should have been operating five to ten miles in advance of the Infantry, accentuating this demoralization. As it was, being tied down to support the cavalry, they were a long ways behind the Infantry advance, the reason being that

as cavalry cannot make themselves invisible on the battlefield by throwing themselves flat on the ground, as Infantry can, they had to retire either to a flank or to the rear to avoid being exterminated by machine gun fire. Close cooperation between tanks and cavalry being, therefore, practically impossible, both suffered by attempting to accomplish it.

That the Germans had at last awakened to the danger of the tank is shown by many captured orders following the Battle of Amiens. A brief extract only, of an order published by the German 21st Division, is sufficient to show some of the lessons they had learned: "Counterattacks against hostile Infantry, supported by tanks, do not offer any chances of success and demand unnecessary sacrifices; they must, therefore, only be launched if the tanks have been put out of action." Another order stated: *"Messages concerning tanks will have priority over all other messages or calls whatsoever."*

FINAL BATTLES ON THE BRITISH FRONT

The operations which took place following the Battle of Amiens can be placed in three general groups:

The Battle of Bapaume and the Second Battle of Arras, Aug. 21 to Sept. 3.

The Battles of Epehy and Cambrai-St. Quentin, Sept. 18 to Oct. 10.

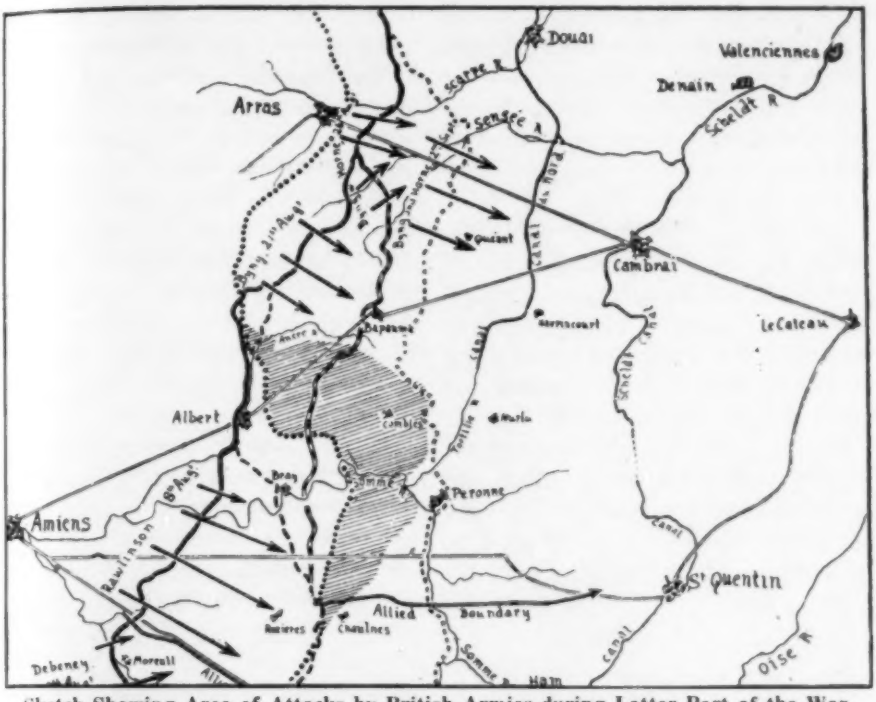
The Battles of the Selle and Maubeuge, Oct. 17 to Nov. 11.

Lack of space will prevent following the fortunes of the tanks in any great detail through the many engagements in these last three months.

The account thus far has shown that the faith of the advocates of mechanical warfare was more than justified by the success attained by tanks as soon as the worst of the mechanical defects had been corrected, and, after the capabilities and limitations of the weapon became better understood, it was used en masse, over terrain suitable for its use. Repetition of tank successes may become monotonous, so only the high spots of the following actions will be covered which have a bearing upon methods used by the British in adapting mechanical warfare to the problems which faced them along their part of the Western Front, during the last three months of the war.

The British used some of their old Mark IV tanks to swell the total number available for the Battle of Bapaume. Two battalions of Mark IV tanks were employed in the taking of the first objective and as far forward as the second. One battalion of Mark V and one of Mark V Star tanks were also used against the second objective and were to advance to the Albert-Arras railway, while two battalions of Whippets were to operate beyond the railway. These ran into a strong nest of machine guns and a number of field guns at the railway. As they reached this point, the mist, which had shielded the first echelon of Mark IVs, raised suddenly and the tanks found themselves under direct fire of artillery. These guns took severe toll before the tanks succeeded in wiping them out with the aid of an extra squadron of airplanes which had been attached to the tanks for just such an emergency. Thirty-seven tanks received direct hits during the first day's action, August 21. Airplanes furnished valuable information during this action.

One feature of this and other actions of this period was the great heat in the



Sketch Showing Area of Attacks by British Armies during Latter Part of the War

Whippet and Mark V tanks. Due to faulty ventilation of the fighting compartments, the crews were affected to such an extent that some of the tanks were of little use.

Armored cars participated in the capture of Bucquoy. The Whippet tanks hauled the cars through a large crater which had been blown in the road at the entrance to this village and the cars then moved on through the enemy's lines, reaching Achiet-le-Petit ahead of the Infantry. Slight resistance was encountered at some points while at others resistance was desperate and the enemy had to be killed almost to a man. One feature of this action was the part played by seven Whippets which were advancing ahead of the Infantry and just behind a barrage. For some reason the barrage had slowed down and the tanks had to maneuver in order to keep out of it. As several tanks were hit while maneuvering, the tank unit commander decided to go through the barrage. This was done safely and the tanks surprised a large number of the enemy who had taken cover. After disposing of these, the tanks came under a heavy machine gun fire. Changing direction, they advanced toward the machine guns and put them out of commission and then came upon several hundred of the enemy who were holding up the British Infantry. Forming in rear of this group the Whippets herded them into the British lines where they were captured.

In the Canadian sector, the armored cars were working in close conjunction with the Tank Corps airplanes. Four

of the cars were hit by shells from hidden batteries and the enemy at once surrounded the disabled cars. The airplanes immediately attacked the enemy and prevented the capture of the cars and crews.

EPHEY AND CAMBRAI-ST. QUENTIN

The battle of Ephey was initiated by the Third and Fourth Armies on the 17th of September during a heavy rainstorm. This advance started along a 17-mile front and its progress was marked by much the same kind of fighting as at Bapaume and Arras; slight resistance at some points and great resistance at others, but it was all ironed out by the tanks, artillery and airplanes cooperating with the Infantry troops.

One feature of this action was the unsuccessful effort to use the Infantry-carrier tank. Infantry machine gunners were taken up to the point covered in orders by some of the Mark V Star tanks in the Third Corps zone of advance on September 21, but owing to the shortage of fighting tanks at that point when the carrier tanks arrived, hostile machine gun fire prevented the delivery of the Infantry troops. There being no way at the time to silence these guns, the carriers returned the Infantry to a point out of their range. Later the attack was renewed and all positions taken.

Another feature was the use of gas in large quantities by the Germans in the belief that tank crews would be unable to operate their tanks. The crews were, of course, working under an additional handicap as they had to wear their masks for over two hours at a time, but they nevertheless could and did operate and eventually took the positions from whence the gas came.

The Cambrai-St. Quentin action opened on September 27 involved the breaking of the Hindenburg line with its auxiliary defenses, which for the most part were heavily wired and extended over a depth of from 8,000 to 16,000 yards. This advance also involved the crossing of the Canal Du Nord, which was 36 to 50 feet in width at the bottom and 12 or more feet deep; as well as the St. Quentin canal which had steep sides, in some places 60 feet deep and along the greater portion of its length had water in it. For a little over three miles, however, this canal ran through a tunnel and this afforded the only crossing place for tanks; a fact realized by the Germans and provided for by exceptional defenses at this part of their line.

Both of these canals were serious obstacles for tanks and several solutions for the problem presented by them were advanced. One of these plans (which was reported to have been used to cross the St. Quentin canal) was to use three or four old tanks to enter the canal and form a bridge for the fighting tanks. This plan was attempted, but these old Mark IV machines doddered to a point several miles from the canal and stopped and the fighting tanks had to cross over the tunnel.

The American 27th Division and the American 301st Tank Battalion, equipped with Mark V Star tanks, were used in this action. These tanks were equipped for and used as fighting tanks. The American Tank Battalion, while moving forward near Ronssoy ran into an old forgotten British mine field and lost two tanks. The mine

field, laid by the British in February, 1917, consisted of rows of buried two-inch trench mortar bombs, each containing 50 pounds of ammonal.

A new feature was the use of tanks to lay smoke screens to cover the approach of other tanks. From the account of this incident, it appears that these screens were laid by smoke bombs. Colonel Fuller states that this effort proved very successful and undoubtedly reduced loss by gun fire.

ARMORED CARS AT ST. QUENTIN

The 17th Armored Car Battalion operated with the Australian Corps and the American troops in an attack upon Bony, inflicting numerous casualties upon the enemy. On October 8, they were attached to the Cavalry Corps, operating toward La Cateau. On this date they kept in touch with the cavalry but on the following morning they moved forward (apparently "on their own") toward Maretz. About two miles beyond this village, one section cooperated with South African Infantry and drove the German machine gunners from a strong position they were holding, the cars running through the hostile machine gun fire, and, by enfilading the enemy's position, killed the gunners and captured ten machine guns and two trench mortars.

Another section made a dash to cross the railway bridge on the Maretz-Honnechy line, but the enemy demolition party saw them coming, and, after lighting the fuse, fled. The leading car got across just before the explosion occurred. This car went through Maretz and Honnechy, all guns firing into the troops which crowded these villages. In Honnechy they ran into a by-road by mistake, just as a party of the enemy came out of a nearby house and the car crew accounted for five of them as they went by. They then left Honnechy and made for another bridge which was known to exist. These cars found many opportunities to fire into retreating supply wagons, truck trains and bodies of troops during this retreat of the German forces.

Having broken the Hindenburg line, this part of the British army faced open warfare; the period of exploitation had finally arrived. However, the British found themselves unprepared to take full advantage of it. They lacked fresh troops for this pursuit and they were short of mechanical warfare vehicles. They had some cavalry but could not use them to advantage here. In speaking of this phase of the war, Colonel Fuller says: "To carry out a rapid pursuit was beyond their (the British army's) endeavors, for the German army, though beaten, was not yet broken. For cavalry to do so was unthinkable, for the German rear guards possessed many thousands of machine guns, and as long as these weapons existed, pursuit, as cavalry dream it to be, is utterly impossible. One arm alone could have turned the present defeat into a rout; the tank, but few of these remained, for since August 8, 819 machines had been handed over to salvage by the tank battalions and these battalions themselves had lost in personnel 550 officers and 2,557 other ranks." This was approximately one-third of their full strength.

The retreating enemy had halted and was trying to form a defensive line east of the river Selle, believing it

would form a sufficient barrier to prevent tanks from making a further advance. They had dammed this river in places to make it more difficult for tanks to cross.

THE SELLE AND MAUBEUGE

The attack started along this front at 5.30 a. m. and at this time the fog was so thick that all tanks had to advance on compass bearings. Each of the tanks carried a crib, and, by casting them into the Selle, at certain points, the 1st, 16th, and 301st (American) battalions crossed in safety. The resistance was not great and all objectives were taken along the Fourth Army front. Three days later the Third Army attacked and again the chief difficulty was in crossing the Selle River. This time, the engineers built an under-water sleeper bridge during the night before the attack, over which the tanks crossed. All objectives were reached.

On October 23, a night attack was staged in which 37 tanks participated. All objectives were taken in spite of the darkness, mist and gas shelling. Many targets presented themselves and the 6-pounder case-shot was used to good advantage. Over 3,000 prisoners were captured.

THE BATTLE OF MAUBEUGE

November 4 and 5 witnessed the last tank attack on the British front in the Battle of Maubeuge. The number of tanks had now been so reduced that only a few were available for this action. No unusual features are recorded, with the possible exception of the action of three supply tanks carrying bridging material, which suddenly acquired the "fighting spirit" and gave the Infantry valuable assistance.

The armored cars operated on up to the Armistice, being seven or eight miles ahead of the nearest British Infantry on November 11, when a dispatch rider overtook them with the information that hostilities were to cease at 11 a. m.

Since the Battle of Amiens, some of the officers and men of the Tank Corps had been in action 16 times; 1,993 tanks and armored cars had been engaged on 39 days in all; 887 machines had been handed over to salvage; 204 had been repaired and re-issued to the battalions, and 313 sent to the central workshops; of the 887 tanks, only 15 had been struck off the rolls as unsalvable; 598 officers and 2,826 men had been killed, wounded or captured, out of a total strength of less than 10,000.

Sir Douglas Haig, in his last dispatch covering the progress of the British advance since the Battle of Amiens, said:

> Since the opening of our offensive on August 8, tanks have been employed on every battlefield, and the importance of the part played by them in breaking up the resistance of the German Infantry can scarcely be exaggerated. The whole scheme of the attack on August 8 was dependent upon tanks, and ever since that date on numberless occasions the success of our Infantry has been powerfully assisted or confirmed by their timely arrival. . . . It is no disparagement of the courage of our Infantry, or of the skill and devotion of our artillery, to say that the achievement of those essential arms, would have fallen short of the full measure of success achieved by our armies had it not been for the very gallant and devoted work of the Tank Corps, under command of Maj. Gen. H. J. Elles.

Reorganization of the Reserve Corps

By *Colonel* Harold D. Mack, *Infantry Reserve*

CHANGES involving the Reserve Corps have been announced. They have been praised in some directions and criticized in others. The Reserve Officers' Association has gone on record as opposing them; this, however, with only a minimum reference of the matter to their membership.

Fundamentally the changes are sound as far as they go. They make the regulations governing the corps more rigid than before. Promotion is limited and a minimum amount of work prescribed. An active and inactive list has been arranged for so that a difference may be had between those officers who devote a considerable amount of time and study to their work and those officers who merely hold themselves ready for duty in case of emergency.

It is unfortunate, however, that certain fundamental needs of the Reserve Corps were not taken cognizance of before the new regulations were made public, and it is also unfortunate that Reserve officers themselves were not consulted more fully before rules and regulations governing that body were laid down for them.

It also must not be forgotton that during times of peace, the Reserve officer must be governed, not only by tactical considerations, but by strategical considerations as well. Inasmuch as this country will not be at war as far as the Reserve officer is concerned, except in grave major emergencies, the peace-time activity and training of the Reserve officer is a different matter entirely than that of the Regular Army officer. A Regular Army officer's training is governed primarily by tactical considerations. A Reserve officer's training in time of peace must be governed by strategical considerations as well. Those who have drawn up the new orders have failed to take cognizance of this. Their estimate of the situation is faulty and naturally, their conclusions are faulty as well.

The Regular Army officer, through training and while on active duty, acquires a very different outlook on life than the average business man. He develops a oneness of purpose and stick-to-it-tiveness that is essential for the success of his profession. He receives an order and carries it out unquestioningly—an order is an order and it is for him to obey. He may know it is wrong, but he takes the good with the bad, philosophically. He stands adversity, rebuff, and disappointment, He is warned against pulling wires for advancement. He is told that the devious ways of politics and business are not for him. He is in a very inflexible organization, bound on all sides by rules and regulations that must be followed and cannot be exceeded.

It is this very training that makes him the real bulwark around which the Army must be built. Without the Regular Army officer a war-time organization of citizens would melt into nothingness. It would be flabby and weak, and would never be able to inflict its will upon the enemy. The Regular Army officer is a far better tactical leader of troops than any Re-

serve or National Guard officer can hope to be.

It is these very qualities which make him such good material for war, however, that so often make him such a poor leader in times of peace. Take General Grant—magnificent in war, he was a baby in the hands of self-seeking politicians and business men when he was elected President. A Regular Army officer seldom understands peace-time psychology; he is no peace-time strategist. He is an infant in arms when it comes to political maneuvering and the intricate by-ways of business. He becomes the easy mark of adventurers, social climbers, and the smooth-talking self-seekers, with the result that when rules and regulations aimed to govern a large body of civilian officers are drawn up, he plays directly into the hands of the least desirable of the Reserve officers and fails to get the benefits that could be derived from the help of the many intelligent, patriotic, and efficient business men willing to cooperate to the fullest extent if allowed to do so. The Army needs friends and needs them badly. It needs friends who understand its needs; who are in sympathy with it and who will help it to do this, not for motives of self-seeking, but because they consider it their patriotic duty.

THE CALIBER WANTED IN THE CORPS

We want no men in the Reserve Corps who are in for business purposes. We want no men in the Reserve Corps who are seeking political advancement, but we do want men in the Reserve Corps who believe they have military ability; who are willing to work to prove it; who demand the opportunity to take an active interest in military affairs; who understand military needs in peace times and will work for their advancement; who are willing to take discipline and give discipline; who refuse to be "bootlickers" in order to secure a raise in rank, and who have the desire to work for the development of National Defense side by side with the Regular Army.

No provisions have ever been made to really bring the Reserve officer into the Army organization. There have been a lot of so-called "One Army Ideas" promulgated, but they are half-hearted.

BREATHE A NEW LIFE IN RESERVES

There are many situations which concern Reserve officers in peace times that Reserve officers are better equipped to handle themselves than the Regular Army officer is. There are many situations where the Reserve officer, if properly brought into the picture, could be utilized for the advantage of the entire defense plan, but the strategy employed in bringing about this situation to date is clumsy. The majority of the Reserve officers are beginning to be very tired of being fooled by clumsy attempts on the part of some one to make them think they are getting something and are somebody, when they are really getting nothing and are nobody. If they are a nuisance and a superfluity as far as the Army is concerned, then why not come out publicly and say so? If they are of value to the Army, why not develop a policy of rules and regulations that will make them of some use? The trouble is that while regulations provide that the Reserve officer should be taught tactically, no attempt is made to utilize him strategically through a

proper study of the strategical situation.

It is my belief that rules and regulations should be drawn up which would breathe the breath of life into the Reserve; which would make it an adjunct to the Army at all times; which would bring to the Army credit and standing which it does not now have, and which would give to our country a scheme of national defense that would not only be on paper, but which would be ready to fight the enemy should we be attacked.

It is true that Reserve officers are called to Washington and placed temporarily on the General Staff. Here again, the psychology is all wrong. In the first place, it would take a really *big* Reserve officer to go to Washington, be placed on the General Staff, and not lose his identity completely. He is immediately placed at a tremendous disadvantage and any ideas he might have had for the benefit of the Reserve are completely lost in the back of his mouth. I know of nothing more formidable than a group of General Staff officers at Washington. What we need is a group of Reserve officers sitting in Washington on a permanent board, similar to the General Staff, under one of their own Reserve officers acting as chief of staff. Naturally, such a body would disappear in time of war, but in peace time they could do a tremendous amount of good for national defense.

A SUGGESTED PLAN

After consultation with many Reserve officers of standing and ability, the following plan has been suggested for the peace-time organization of the Reserve. It is not contended that this is the only plan. Many points might be subject to modification and improvement, which could be arrived at through discussion and study. However, the basic idea, I believe to be sound and feel that it deserves the attention of those who are interested in national defense. If this plan could be presented to such a group of Reserve officers sitting in Washington, it is my belief that results could come from it that would amount to something.

Territorially, the United States has been divided up into nine corps areas. Each corps area has assigned to it certain Regular Army, National Guard and Reserve divisions, together with auxiliary troops necessary to complete a field army. These corps areas are administered by corps area commanders and their staffs. Each Reserve division has assigned to it a certain number of Regular Army officers to act as administrators in peace times. Likewise, the officers unassigned to any division are administered through Regular Army officers who head the non-divisional groups and attend to their training. Theoretically this is fine, but actually it does not work out so well. The reason is that the Reserve officer, after his assignment to the division, finds very little to keep up his interest and his training in peace times is woefully lacking. The non-divisional group likewise has nothing to maintain its interest. It must be understood that this is not due to any failure on the part of the Regular Army officers in charge to give of their best. It is due to a defect in the organization which should be corrected before the potential efficiency of the Reserve is entirely lost and before the country

will find that it is leaning on a broken reed in depending on the Reserve to function successfully in war time.

ORGANIZE TRAINING REGIMENTS

The defect lies in the fact that Reserve officers are assigned directly to the final organization they would be with in time of war without first graduating from some type of training organization that would function continuously in peace time and which would have tables of organization suitable for peace time training of officers of all branches of the service. If in peace time, Training Regiments could be organized, as many in number as would be necessary to take care of the officers in any district, under whose direction lectures, schemes of instruction, theoretical training and all other inactive duty training could be developed, great good could result. These Training Regiments should be organized with a large staff, acting as advisors and made up of high-ranking specialists. No officer should be assigned to any permanent war-time unit without passing through the Training Regiment, and after being assigned would still remain a member of the Training Regiment for training purposes. If after assignment his training was unsatisfactory, he would lose his assignment to the war-time unit. Through the proper organization of the staff of such Training Regiments, officers of all branches of the service could be assigned and their peace-time tactical training taken care of.

The Regular Army organization to do the administrative work could be greatly simplified over the present system. Instead of having one group of officers for the division and another for the non-divisional group, all the administrative work could be handled through one group of Regular Army officers. It is true that this would throw a larger burden of work on the Reserve officers who would command these Training Regiments, but inasmuch as the command need only go to those officers who would volunteer to accept it and who would enjoy the work, it could not be considered a hardship. As a matter of fact, the peace-time training it would give many officers in coordinating the various branches of the service would be invaluable in war time.

THE LINE AND THE STAFF

The relationship between the line and the staff is of the utmost importance in war, and it is in peace time that this type of training should be gone into. We take it for granted that a great engineer knows his job, a fine doctor knows his, a big attorney, his, but a big engineer, when he commands an engineer regiment, a big doctor when he commands a medical regiment and the big attorney when he becomes an adjutant in the Army must know something besides his own job in order to be of use within the Army. To simply assign these men to paper engineer regiments, paper medical units and paper adjutant general departments does not give them a chance to understand the correlation of their work with the rest of the Army, and the bigger they are the more difficult they are to control and weld into a machine in time of war.

Team work is the great essential need of all troops, and team work can only be developed provided there is a complete understanding and a basic train-

ing applicable to all branches. It is in this phase of the work that the scheme of national defense has fallen down, and in neglecting to take cognizance of this branch of the work they are losing out on a training scheme which can be carried out in peace times and which would prove of constant and increasing interest to the Reserve officers; that would not be a burdensome expense to the country and would allow the Reserve officer to feel that he was potentially part of a real live organization and not merely a paper one.

DEVELOPMENT OF TEAM WORK

It is in fact that in peace times the greatest interest can be maintained only through the development of problems in team work. A medical officer who is up in his profession has very little interest in studying theoretical war-time surgery. He is intensely interested in his relationship to other units or, in other words, learning his tactics. This same applies to all the other staff corps. Besides which, a great many of these specialists are men of great prominence in the community and their enrollment in these Training Regiments would insure a local interest that could not be obtained in other ways. I know for a fact that a group of medical men or a group of engineers working alone would take very little interest in their problems, but that by bringing a medical officer, an engineer officer, a lawyer and others of that type together with Infantry and Artillery officers it would produce real intense interest. There is no use in going into the psychology behind this, but it is present just the same.

Unless something is done to develop the peace-time organization of the Reserve, we are going to find the largest and most important component of our Army in time of war is not going to function until after it receives too costly lessons on the battlefield. Some of this can be avoided by peace-time organization along strategical lines.

PERFORMANCE OF MILITARY WORK

It is stated in the new regulations that the officers who devote their time and attention to studying will receive the benefit of this work and obtain promotion to high command. Here is one case where the regulations are bound to fall down. It is common knowledge that many of the Reserve officers who do the most work in peace time, who are away up in the correspondence courses, who always have plenty of time to go to Washington, and who are intimately associated with the Regular Army officers in their vicinities, are all too frequently men who would make the poorest type of war-time leaders. Many of them are men who have no other visible means of support and so have ample time to do Army work. Others go into it for business reasons or political advancement. Regardless of the amount of work a Reserve officer might do in peace time, a very careful check must be placed upon his war record and his position in the community before giving him leadership in the Reserve. I know of many cases where officers have received high rank, but whose very presence in the Reserve has done incalculable harm.

For the above reasons, the command of these Training Regiments must always be placed in the hands of combat officers. Just as in time of war, the Infantry officer present, of the highest rank becomes the commander

of the troops, so in peace time, it is the combat officer who must command these Training Regiments.

THE COMBAT OFFICER IN CHARGE

When all is said and done, it is the combat officer who is of the utmost importance as far as the Reserve is concerned. This officer must bear the brunt of the hard work, the disagreeable duty, and the fighting, and he must in addition to his own business, learn another business entirely separate and distinct. Engineers, medical officers, and other specialists are, after all, being constantly trained in the same line of work they would follow in time of war. Their peace-time business and their war business are practically identical, but it is the combat officer who will be called upon for military leadership and to conduct the campaigns. While it is patent that these officers cannot be given the same rank that eminent non-combatant specialists are entitled to, at the same time their potential ability to command during war must be recognized.

A provisional peace-time organization would take care of all these non-combatant officers. It would give a scope to their activity. It would utilize their executive ability, their political influence, or any other talents they might have, but it would not fill up the theoretical fighting units with officers who would have to be relieved on the declaration of war, and would not give all the desirable promotions to those officers who can only wear good clothes, make good speeches, or shake hands with Congressmen and Senators.

Through the system of Training Regiments, you would have your newly assigned Reservist put into association with his fellow officers from all ranks in life. He would feel that he had an organization to which he belonged and his interest would be maintained. After his assignment to his war-time unit he would still have this same supervision and would find it at all times necessary to keep up with his work if he wished to retain his assignment.

TRAINING REGIMENTS WILL BE ACTIVE

It might be said that there is nothing to prevent the present war-time organized regiments from performing this function for the officers assigned to it. Theoretically this is so, but actually the facts are as follows: The various regiments as now organized do not contain a sufficient number of officers who are actively interested to insure their functioning in peace-time as anything more than paper organizations. Each regiment may have a few officers who do a certain amount of work, but the large majority of officers are unable, through business reasons or otherwise, to do anything more than the most perfunctory kind of service. By forming Training Regiments, organized to take in officers from every branch of the service, a group of men with more leisure for military work can be gathered together and these various groups will have far more power in the community, far more influence politically, and far more standing socially than the present war-time organizations.

The Army badly needs the help of powerful groups working together. The isolated efforts of a few individuals cannot accomplish a great deal.

The importance of having these Training Regiments act as reservoirs for promotion and assignment to war-

time units is incalculable. They would automatically take care of a temporary over-supply of officers in any one particular branch without losing the benefit of their services to the country.

The morale of the Reserve officer must be maintained at all times. The human factor of jealousy must be taken into consideration, and it is only through a powerful organization such as proposed, that this can be accomplished.

I feel confident that a careful study of this situation by the General Staff will cause them to see the many advantages attached thereto, and I know that Reservists throughout the country would welcome a change that would bring life to their organization and would help them to feel that they were accomplishing something in return for the sacrifice many of them are making from purely patriotic motives.

The Mid-West Colleges on National Defense

AT the Mid-West Student Conference, held at Champaign, Ill., February 14-17, in which 39 colleges and universities participated, the following resolution was passed with only one dissenting vote:

WHEREAS, the Congress of the United States has seen fit to pass the National Defense Act, including R. O. T. C. training in land grant colleges and universities, as a means of furnishing national defense to our country in case of emergency; and

WHEREAS, we think it is the best system of national defense that our country has ever had, or that has been proposed to date; and

WHEREAS, we firmly believe in the value of military training as a moulder of character and leadership, and in physical and mental development; now, therefore, be it

Resolved, That we the delegates to the Mid-West Student Government Conference, composed of colleges and universities extending from the Gulf of Mexico to Canada and from Colorado to Maryland, being the official representatives from our respective schools, in conference at the University of Illinois, Champaign, Illinois, February 14-17, 1927, do hereby heartily endorse the National Defense Act in its entirety, and do hereby declare ourselves willing and eager to come to the defense of the honor of our flag, in any capacity, in case of necessity; and be it further

Resolved, That we look with disfavor upon pacifist organizations and similar groups which attack and attempt to destroy our present system of national defense.

Common Sense Message Centers

By *Captain* Everett L. Rice, *Infantry*

A DISCUSSION of message centers in the Infantry brigade, regiment, and battalion, appears in order at this time with a view toward improving the organization and procedure, but in so doing the writer intends, in no sense, to deprecate the system as a whole or the work of the Signal Corps under whose guidance the message center has come into being. Perhaps it is bad etiquette to look a gift horse in the mouth, especially if it is better than any we ever have had; but after we have worked conscientiously with the animal for several years, if it develops some of the traits of the well-known white elephant, we at least are justified in expressing concern; certainly we are justified in talking about it.

Message centers of the Infantry are subjected to a great many criticisms. This article points out a number of faults that can readily be corrected

There are three reasons that make necessary the existence of message centers in Infantry units. These are:

First—To provide a fixed locality to which messengers and dispatches pertaining to a particular unit can be directed.

Second—To provide a pool of all of the means of communication, and an agency to keep informed of the facilities available at all times, and charged with employing them to the best advantage.

Third—To provide a positive, though merely temporary, record of all outgoing dispatches, to insure their timely delivery to the proper parties.

The present message-center procedure was developed by the Signal Corps after years of experience. As one of the prime missions of this branch is the establishment and maintenance of efficient signal communication, it has quite naturally embodied in its system more or less elaborate processes, particularly to afford evidence of the proper performance of the duties of its various agencies. The Infantry, on the other hand, is concerned with signal communication only as a means to an end. While the success or failure of Infantry communications is a great factor in influencing the outcome of operations, the record of efficiency and the alibis of the communications system are not important from any Infantry viewpoint, and are properly overshadowed by the general result.

When the communication activities within the brigade were divorced from the Signal Corps in 1920, the Infantry inherited the system evolved by that branch, and has since that time accepted more or less automatically all of its teachings. Some of these do not fit our needs, and in the light of our newly gained, but first-hand, experience, we should not hesitate to take steps to adjust them to our requirements.

The system now in effect is prescribed by United States Army Train-

ing Manuals Nos. 24 and 25, entitled respectively the "Message Center Specialist, Students Manual" and the "Message Center Specialist, Instructors Guide." The present procedure, or at least the result of it, are too well known to require description here.

MESSAGE CENTERS NOT SATISFACTORY

Confidence in a thing is a prerequisite toward enthusiastic cooperation and teamwork. That our message centers are not entirely satisfactory is evidenced by the fact that a large proportion of our officers regard them with apathy if not with outright hostility. This condition in itself is sufficient justification for considering an early change, as enough time has elapsed to have given them a fair trial.

The reasons for the unpopularity of message centers are numerous and varied. A number of officers regard message centers in an unkindly light because they do not understand them. That this condition exists in spite of the fact that the subject of signal communications has received especial emphasis in training during recent years, indicates that the operation of our message centers is too tedious and complex.

Other officers who are better acquainted with the subject of signal communication in general, have pointed out a number of faults, namely:

(1) Classification of dispatches according to their degree of urgency as assessed by the message-center chief places too much responsibility on that individual. Rarely will a noncommissioned officer be found qualified through training and judgment to act in this capacity. While officers are permitted to indicate the degree of urgency in some cases, this is the normal duty of the message-center chief.

(2) Keeping the elaborate records now in existence, which are designed to fix the responsibility on each individual and agency in handling dispatches, delays all traffic. This delay time is not due to the existence of message centers, but is caused by the unnecessary clerical processes. These records for fixing the responsibility on each individual overburden the signal-communication personnel with useless technique, and make the various bookkeeping operations loom larger in their perspective than the real mission in life, of the men concerned, i. e., handling dispatches in the minimum time. These records are defended in some quarters as a source of useful data, but they are of little value as such for war diaries, etc., as the information they contain is directly at hand for people who need it, in the various staff journals, and more comprehensively, too, as the latter contain the gist of telephone conversations and verbal orders, which matter is not included in the message-center records.

CHANGES TO FIT INFANTRY NEEDS

Classification of all dispatches according to the degree of urgency in two categories only, instead of three (ordinary, rush, and priority), as at present, is one change suggested, these classes to be "ordinary" and "priority." "Priority" dispatches would be so designated by the person initiating them. It is a human trait for every person interested in his job to consider this the most important. Consequently more messages are now classified by the writer as "rush" than as ordinary,

although the classification is supposedly a duty of the message-center chief except in rare cases.

It is believed evident that in those instances where classification, according to the present system, is not made by the sender, the message-center chief is not competent to weigh the relative importance of these dispatches.

It is also suggested that the code clerks be transferred from the message center to the radio-and-panel section. The chief of the radio section should be permitted to send messages referred thereto, either by radio or buzzer-phone. In many cases the latter can be used. When this is possible, much time is saved on account of the fact that such messages are sent in clear. If radio is to be used, the code clerks can encode the messages within the radio section. Incoming coded messages can be decoded within the section, and the message delivered directly to the party concerned. Code clerks and radio operators require in general the same mental characteristics, and their duties naturally overlap to some extent. If they are combined in the same section, instruction in both specialties can be had in the later phases, thus giving a more flexible organization.

The message-center section, as now authorized, less the code clerks, can readily accomplish requirements 1 and 2, i. e., provide an agency at a fixed place readily accessible to messengers and others concerned, and charged with utilizing the pooled communication facilities to the best advantage.

The third requirement, providing a positive but temporary record of dispatches to insure their proper delivery, involves a more detailed description as set forth below. Under this heading the following is recommended:

(1) Abolish the message-center register,

(2) Continue the practice now taught at the Infantry School of sending messages to the message center in duplicate.

(3) Use the following procedure for all outgoing traffic: Dispatches would be sent to the message center for transmission as heretofore. They would be received directly by the message-center chief, who notes on them the time, how they will be sent, and gives them each a serial number. He makes similar notation on the duplicate. He then gives the message to the proper agency to be transmitted or delivered physically according to his decision. He retains the duplicates as a live file until the agency charged with sending the message has reported its acknowledgement. When a report is made to the message-center chief that a message has been properly acknowledged, the duplicate is removed from the live file and kept until collected by the adjutant. By frequent inspections of his live file of duplicate messages, the message-center chief is kept posted regarding the progress of all messages; and whenever there is a tardy acknowledgement, he takes appropriate action, sending the duplicate or a third copy by additional means if necessary. When, as will sometimes happen, only one copy of an outgoing message is received, he will make necessary memoranda (time received, addressee, serial number, how sent) on a message blank, and keep this in his live file of duplicate messages, handling it in the same manner until it has been acknowledged.

Dispatches relayed through a message center to other units are comparatively rare. Such dispatches can usually be telephoned and in some cases sent by radio. In the exceptional cases when dispatches are relayed through an intermediate message center or message centers, the pertinent data are written on a message blank and handled as described for an outgoing message with no duplicate copy.

(4) Incoming messages—

a. By messenger — Incoming messages are brought by the messenger to the message center because this is a fixed locality and posted with signs so that it can readily be found. The messenger shows his message to the message-center chief or his assistant. The incoming messenger is then shown the person to whom message is to be delivered. The man who brought the message, himself delivers it to the person for whom it is intended. It will of course be necessary for this messenger from an outside message center to be conducted to the person or have him pointed out, but this requires far less energy and time than the present procedure, and in addition permits the recipient of the message to obtain supplementary information from the messenger by questioning him. This contact between messengers of other units and the recipient of the message is especially desirable in cases where messages are brought to the battalion command post from the companies.

b. By telephone—Incoming messages by telephone are copied on the message blank, as now prescribed, but are sent directly to the person for whom intended, by one of the orderlies. They do not go through the message-center chief.

c. By radio and by visual means—Messages received by these agencies in cryptic form are deciphered or decoded within the radio-and-panel section. All messages received are delivered directly to the person concerned, in clear, without going through the message center.

Nationalism Weakened By Pacifists

The present situations in China, Mexico and other South and Central American States, in Poland and Russia, in Italy and Turkey, in the Balkans, in Portugal, to mention only the major points of stupendous danger and almost inconceivable potential tragedy, should suggest to the pacifists of the United States that they, at least, may be doing their country and the cause of democracy deadly injury by their ceaseless activities which tend to weaken individual impulses to rational nationalism, and which, materially already have been responsible for a deplorable weakening of the national defense.—*Cincinnati Enquirer.*

The Army Blues[1]

By *Captain* Jas. P. Murphy, *Infantry*

THE Army officer who has recently completed the transition from the standing to roll type of collar, on his service uniform blouse, is more comfortable. But he is not satisfied. Even if the roll collar exposes a triangle of white linen and black tie at dress affairs the Army remains dully garbed in olive drab, while officers of the Navy and Marine Corps eclipse them with blue and gold.

The "O. D." may go at a dance at some remote post on the border, but the situation is different at posts near seaports and the larger cities, where dinner parties and dances bring the Army officer into social competition with the dressy chap from ship or shore station. And in our National Capital, focal point of official life, the contrast is positively depressing.

Let us see what happens at the annual White House reception on New Year's Day. Here the President of the United States receives the members of the diplomatic corps and high officials of State, together with such officers who have attained the rank of admiral or general. The great salons of the White House—in a Latin-American republic it would be called the president's palace—are cheerily flooded with light that glistens from crystal chandeliers and glows through banks of ferns and flowers. The elegance of these classic rooms harmonizes well with the imposing scene on the polished floors.

Ambassadors, ministers and envoys in court dress heavily embroidered with gold oak leaves, or other flora, appear with their military and naval attachés, whose varied uniform and accouterments represent the Napoleonic tradition at its heighth of glory. Although our own elder statesmen perhaps look a bit somber in their conventional dress, at least they have the negative merit of doing the correct thing and upholding their civilian dignity. As for our Navy and Marine Corps officers present, with their heavy gold epaulets or shoulder knots, gold buttons and trimmings, they easily hold their own against these resplendent foreign attachés.

In the midst of this brilliant assembly there now intrudes a familiar figure in olive-drab, with accompanying leather and "brass work," wearing the conventional "pink" breeches and russet boots as a further concession to this momentous occasion, as much out of keeping with the scene as would be a golfer in plus-fours and sweater. Looming up like a sore thumb, he courageously makes his way through the scintillating throng. Conversation hushes, as if awaiting the mounted escort in full field kit. It is a general of the United States Army!

There are often heard such expressions as that which came recently from a member of Congress, who would like to institute dress reform in the Navy and Marine Corps: "To see some of our officers decorated at a full dress affair would make you think that they were a lot of dukes, marquises, viscounts and barons."

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[1] Suggested by an article in the *New York Times*.—Author.

However offensive the thought may be to political philosophers, steeped in Jeffersonism, there is a psychological side to an attractive uniform which may not be dismissed with a gesture. The allurement of imposing dress is instinctive in the race, and it cannot be explained away by materialists. The governmental system of most of the civilized countries rest upon display not essentially different.

And the very fellow who prides himself on his horse-sense and sniffs at military pomp goes in for the most "ultra-plus" of plus-fours, and joins the fraternal order that wears the most fanciful and extravagant uniform. It is he who supports the hotels with majordomos in knee breeches and frogged liveries, and doormen regaled as full admirals of the Patagonian navy. According to the movies the Czar of Russia's court never equaled the splendor of the home of the ordinary American millionaire. In fact, the social chasm between the overstuffed flunky and the black-shirted porter is one of the remarkable anomalies of American democracy. Here again, of course, the real gulf is between Mrs. Flunky and Mrs. Porter.

To dress "like a duke" is the official privilege of officers of the Navy and Marine Corps, and the free right of members of fraternal marching ranks. Upon the Army alone has utilitarianism in uniform been forced. The contrast between the gray and blue and gold of the West Point cadets and midshipmen, and the dull olive drab of the National Guard during the recent Army-Navy football game at Chicago, was marked. As the ranks swung by the "Ohs" and "Ahs" of the feminine hosts were only for the trim-clad youngsters, while the Guard received the same deference that would ordinarily be accorded a contingent of the department of street cleaning, in so far as interest in their uniform was concerned. This same applies in the many parades and other ceremonies in which Army, Navy and Marine contingents appear.

It is now ten years since the Regulars laid away their garrison blues in cedar chests, and the dress belt and shoulder knots in tin cases. Yet as late as the recent New Year's reception at the White House, general officers of the Army wore the same uniform to this august function as they would wear at an inspection of stables.

The excuse for not giving back to the Army its historic blue sounds plausible until analyzed. Economy! It would be a shame, say the elder statesmen, to put these officers to the expense of extra tailoring, which must come out of their own pockets, when they can get along decently in olive drab. Yet the Navy and Marine Corps officers with corresponding rates of pay have to dig into their private funds for dress uniforms and never a plaint has been heard from them over the high cost of broadcloth and gold lace. So the Army alone advertises thrift at dress affairs.

The old "blues" did represent a considerable expense. They included dress, full dress, mess and social evening dress. The mess jacket may still be worn in white in the tropics. But social evening dress of smooth blue-black cloth on clawhammer lines, with gold shoulder knots, gold buttons and gold lace loops indicating rank on the sleeves, low white gold-buttoned waistcoat of the conventional style, rests under an official ban.

These four types of blue uniform would cost today over $500, made by capable tailors with average quality of gold trimmings. But the cost would mount with imported cloth material and heavier plated trimmings.

A Navy officers' dress uniforms cost him between $500 and $800. His social evening dress alone means an outlay of about $350.

Were the blue restored, possibly one class of Army officer would feel the strain, and that is the married junior officer without independent means or an outside income. But even in this case the good wife would, no doubt, skimp to make up the difference. For was she not in love with the Army before she was in love with the man, who in her fond eyes, personifies it?

There is, however, a rift in the clouds. The present "O. D." uniform is not all that it should be. Its dye, contrary to repeated assurance from the Q. M. C., does not always stand undaunted against the rays of a bright sun. Moreover, the manufacturers of blue uniform cloth are developing a deep sympathy with the just aspirations of the land service. The great war stores of olive-drab for the enlisted men are, between distribution to National Guard, R. O. T. C. and Reserve, rapidly approaching depletion. So the time is not far distant when new contracts must be let. As costs of cloth and tailoring are approximately the same, the blue will have its opportunity for garrison dress.

Meanwhile our jaunty sailors and marines lord it at all social functions with "blues" and bullion trimmings, and our Army strives to appear happy in olive-drab, wondering what the average civilian would say if obliged to wear a single style of suit designed to strike a happy medium between the exigencies of duck hunting and the dressy requirements of the drawing room.

They Know

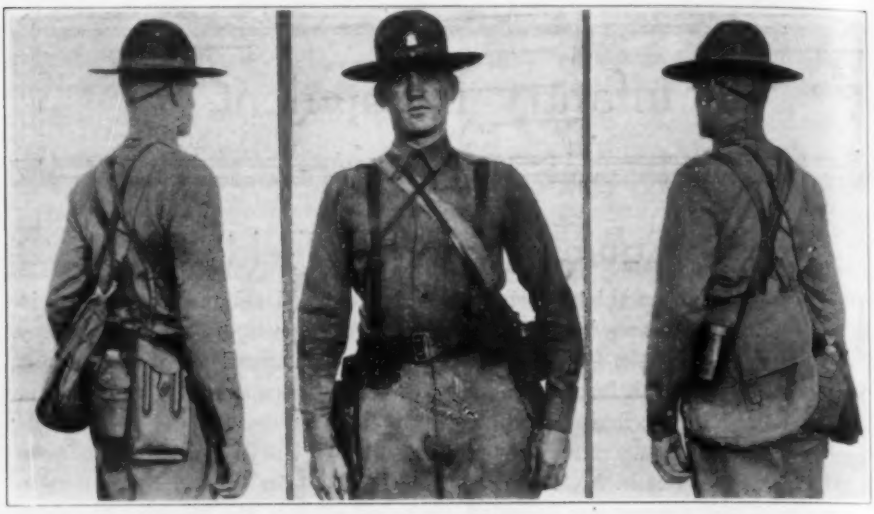
Why a gun or a bayonet? asks the pacifist. Why an army or a navy? is the protest of the sophomoric foe of all armaments. Well, there are a few thousand Americans, including missionaries, teachers, doctors, engineers and business men now in China, who know the answer. . . . Those who escape with their lives must thank the guns of the destroyers in the Yangtze and the bayonets of the landing parties. Gun-talk is the only language understood by an insolent Chinese war lord or by the riffraff of a Chinese uprising. Or ask the white residents of the International Settlement at Shanghai, huddled back of a thin line of armed and disciplined fighting men and facing a riot-torn Chinese city, whether or not an army and a navy is ever needed. They know.—*Philadelphia Public Ledger.*

Infantry Equipment

Equipment for the Field

THE photograph on this page illustrates the differences between the pack to be carried by the Infantry soldier under the new plan for equipment that has passed the preliminary stages of solution by the appropriate agencies of the War Department. A complete discussion of this subject was included in the March number of the INFANTRY JOURNAL.

The soldier at the left carries the equipment that was prescribed during the latter part of the World War for Infantry in the combat zone. The soldier at the right carries what will be prescribed for the doughboy up until he enters the combat zone, at which time the helmet and additional ammunition will be issued, but he will not carry as many rounds of ammunition as the soldier on the left is shown as carrying. Whether or not the soldier carries the overcoat or raincoat will depend upon climate and season. In case of operations in a warm climate the woolen olive drab,

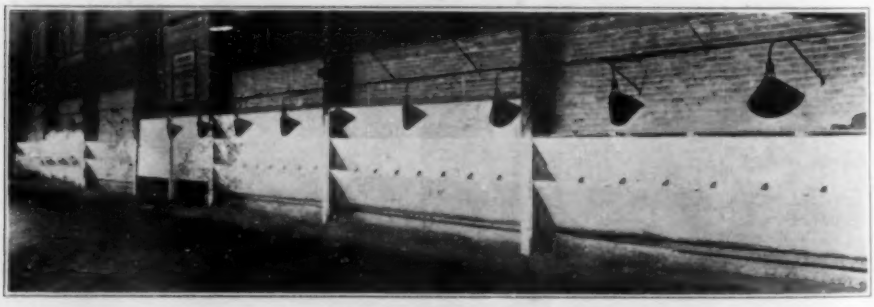


will be replaced with cotton. The picture was posed by soldiers of Headquarters Company, District of Washington.

The equipment of the officer for the field is shown in the picture above. This picture was taken by the 29th Infantry, Demonstration Regiment of the Infantry School. The identification tag and whistle are not shown in the picture.

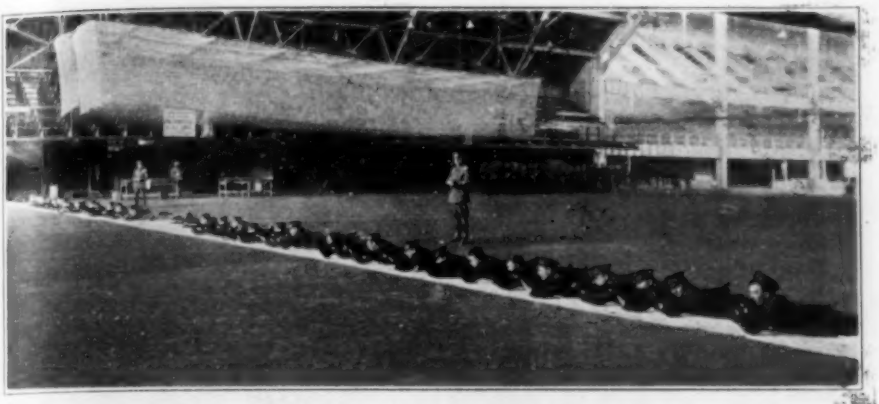
Musketry in An Indoor Range

THERE have been developed in the R. O. T. C. unit of the State University of Iowa, under the direction of Lieut. Col. Morton C. Mumma, Cav., the P. M. S. & T., facilities for extensive indoor musketry practice. The university possesses an especially large armory, 420 x 198 feet, in which the



Details of Target Construction

The silhouette targets shown are of steel, brazed to hinges, making them disappearing when hit. They are spaced one yard apart, and are placed in six groups of seven targets each. The backstops are steel plates of standard stock sheets. Targets are lighted by reflectors, with 200-watt bulbs, and adjustable



The Firing Line in Iowa University Armory

shooting range was built. The range provides 50 targets for rifle marksmanship, a pistol range of 24 targets at which firing can be conducted up to 50 yards, a machine gun range for four guns at 1,000 inches, and an automatic rifle range of the same capacity. For musketry, landscape targets with six squads can be used simultaneously.

In musketry problems the ranges are reduced to one-eighth the outdoor distances and the intervals to one yard. Targets are reduced to one-eighth size. A musketry problem fired in March opened at 62½ yards, in which various situations were arranged that permitted of fire control by the squad leader. Owing to the reduced size of the targets first-class shooting is required. Ammunition used is caliber .30, model 1919, and is satisfactory.

Colonel Mumma is using the competition feature in the firing so that a high degree of interest is always manifest. The university is most fortunate in having such splendid facilities for marksmanship, as well as for other military training.

Packs for Machine Guns

THE machine gun companies in the Philippine Division are now experimentally equipped with pack transport, as a result of tests of the equipment in the annual maneuvers of 1926 in which three companies were so provided. As there would be difficulty in procuring mules for pack purposes in case of war, the native pack pony was tried and the equipment shown in the pictures on the next page was devised.

In the process of the developing of the pony pack, Maj. D. M. Ashbridge, G-3 of the Philippine Division, made a trip to Indo-China to study the French Colonial equipment, where conditions are similar to those to be met in Luzon. Based on his observations Major Ashbridge had made a pack similar to that used by the French. This work was actually and ably done by 1st Lieut. Vincent D. Mee, supply officer of the 1st Battalion, 15th Infantry, to which organization the ponies had been assigned. Upon completion of the pack it was thoroughly tested, and met with the enthusiastic approval of all con-

Pack Transportation for Machine Guns in the Philippines
The pictures show the near and off sides of the experimental pack equipment for transportation of a machine gun. The ammunition boxes are placed at *a* and the water box at *b*

cerned. The last test was one of a four hours' march. The pony carrying it (total load 175 lbs.) returned in excellent condition, not a hair on his back being out of place. Later, another pack lighter in weight than the first was devised.

The 1st Battalion, 15th Infantry has used all during the field training season this year two ponies thus equipped along with mules carrying the remainder of the battalion's guns. All concerned prefer the ponies to mules. They are hardy, eat little, are easily kept in condition and when decently treated become great pets of the personnel.

The packs, using soldier labor to construct them, cost about five dollars. The 1st Battalion, 15th Infantry is experimenting with another pack of the aparejo type so that a comparison can be made with the French type.

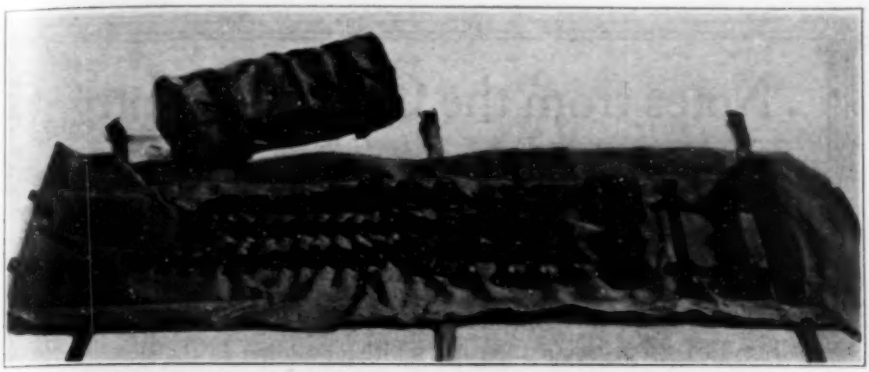
The regular machine gun carts are kept ready for immediate use in case of need, but for service in Luzon they are considered by all concerned an encumbrance and not wanted.

The above results were accomplished largely because of the belief of Maj. Gen. William Weigel, commanding the division, in the superiority of pack over cart transport, and his enthusiastic support in the matter.

Spare Parts Kit for Wagon

THE numerous small articles prescribed by Circular 58, W. D., 1923, to be carried in the jockey box of escort wagons has always presented the problem for service company commanders of devising some way to prevent loss and at the same time to be able to display the articles for an inspector. In some cases the spare parts have been carried in boxes, bags or pieces of burlap, which upon being opened have to be sorted around and put in shape before they can be checked.

The spare parts kits made by the



Kit for Spare Parts of Escort Wagon Carried in Jockey Box
Designed by 1st Lieut. A. P. Kitson and Sgt. F. Walsh, Service Co., 7th Infantry, December, 1926

Service Company, 7th Infantry, to be carried in the jockey box of each wagon, is made of 20-ounce O. D. canvas, 46″ x 18″. There are three leather straps, one at each end and one in the center to be buckled before the kit is rolled up, and is fastened when rolled up by two leather straps that run lengthwise of the kit, all straps are riveted to the canvas to hold them in place uniformly and to prevent loss. The dimensions of the kit when rolled is 13″ long and 5″ in diameter.

All articles are given a thin coat of black paint, to prevent rust, which in no way interferes with the nuts working freely on the bolts, and does away with the old system of oiling or greasing to prevent rust.

Supplying Rations by Cargadores

THE problem of supply for field service for the organization operating in the jungles of the Philippines where no wheeled transport is possible is an entirely different one from that in which motors or wagons can operate. The 1st Battalion of the 45th Infantry, (P. S.) less Companies A and B, which is stationed at Pettit Barracks, Zamboanga, in Mindanao, and is the only organization of U. S. troops in the Islands not stationed in Luzon, must necessarily move its supplies by human carrier, or cargadore.

Capt. Ed. C. Betts, stationed at that post, devised a new pack for the cargadore, which was described and illustrated in the December, 1926, number of the INFANTRY JOURNAL. Captain Betts furnishes some rather interesting figures on the number of cargadores, each carrying 50 pounds of rations, necessary to supply a command. The handy tables prepared for use of the supply sergeant, by which the sergeant can, in a few minutes, compute the number of ration cargadores required, shows that a combat column of 100 men in the field for 10 days, together with the food required by the cargadores, requires 123 cargadores,—a total of 223 men to furnish 100 men for combat.

Notes from the Chief of Infantry

Assignment of Infantry Officers to Duty

THE Chief of Infantry attempts to arrange assignments for all Infantry officers to the duty or station desired by these officers, subject to the eligibility and suitability of the officer concerned and, further, subject to economy of mileage, with the proviso that the most desirable duties and stations should be properly rotated among Infantry officers.

It has been noted that there are a few Infantry officers who believe that the good offices of friends in Washington or elsewhere are needed to bring to the attention of the Chief of Infantry their desires with relation to duty and station. These officers write to four or five different persons in Washington and in the extreme cases ask several friends to write to officers in the Chief of Infantry's office, or to the Chief of Infantry. These many requests, regardless of source or ostensible destination, all converge on the Chief of Infantry. Each time the request is presented, the officer's records must be reviewed and a reply made, all of which involves duplication of effort without adding in the slightest degree to the officer's chances of getting what he desires. One letter personally addressed to the Chief of Infantry would have obtained equal consideration and would have accomplished the same result without the necessity of additional correspondence. The same would of course be accomplished by writing to the officer in charge of personnel or to any officer on duty in the office, since such matters are always brought to the attention of the Chief of Infantry.

General Allen desires all Infantry officers to know that he is personally interested in their future success and in their personal welfare. Each Infantry officer is at liberty personally to address the Chief of Infantry, whether or not a personal acquaintance exists, and let his wants be known with regard to future duty and station. The Chief of Infantry much prefers this direct method.

The Infantry Team of 1927

LIEUT. Col. K. T. Smith, Inf., has been designated at captain of the Infantry Rifle and Pistol Team for the 1927 National Matches. Colonel Smith was recently ordered on temporary duty to the Office of the Chief of Infantry and is completing detailed arrangements for the organization and training of the team. He joined the nucleus of the Infantry Team, which is under training at Fort Benning, the latter part of April.

Most encouraging reports of the progress being made in the preliminary

work are being received from Lieut. Col. Harris Pendleton, Jr., in charge of the nucleus under training at Fort Benning. A comprehensive detailed schedule has been prepared covering the period March 16 to April 30. The enlisted men forming part of the nucleus are quartered on the experimental range and are under instruction from 8.30 a. m. to 4.00 p. m., daily, Saturday afternoons and Sundays excepted. Hours of instruction have been specified for officer candidates for the Infantry Team who are students at the Infantry School or on duty at Fort Benning. The initial enrollment of candidates for the Infantry Team comprises 30 officers and 39 enlisted men. Capt. Walker G. Layman, Inf., has been designated as head coach, and Capt. A. P. Withers, Capt. W. C. DeWare, and Capt. K. L. Berry, 24th Inf., have been designated as assistant coaches during the preliminary work at Fort Benning.

The individuals selected from the Infantry at large as likely candidates for the Infantry Team will be assembled at Camp Perry about June 3 for the tryouts. It is expected that approximately 40 officers and men will be ordered to try out for the Infantry Team.

The Chief of Infantry is completing arrangements for the comfort of the Infantry Team during the tryouts and during the matches. Arrangements have been completed with the Ordnance Department to quarter the Infantry Team at the Erie Proving Ground, in semi-permanent quarters during the tryout period. The commanding officer of the 24th Infantry has been instructed to select three enlisted mess attendants and send them to the Cooks' and Bakers' School at Fort Benning for a special course of instruction. The cooks selected will be excellent plain cooks. The course of instruction is for the purpose of perfecting them in the preparation of desserts, pastries and other delicacies, and in further perfecting them in the preparation of well balanced meals and the setting of an attractive table. These measures are expected to add materially to the comfort of the team members.

Small Bore Ammunition

UPON the recommendation of the Chief of Infantry the War Department has recently approved the substitution of caliber .22 ammunition for preliminary work in rifle marksmanship in place of the caliber .30 gallery practice ammunition. The gallery practice caliber .30 ammunition has proven most unsatisfactory. The limited range and the poor accuracy of this ammunition rendered it unsatisfactory for use in competitions. The powder charge is of such power that the use of this ammunition in indoor gallery ranges is generally impracticable. The ammunition leads the bores of the rifles to a marked degree and since each man fires his own rifle, the problem of eradicating the lead in the bores of so many rifles has been considerable. The unpopularity of the caliber .30 gallery practice ammunition was strikingly apparent during the calendar year 1925, when, although five

million rounds were authorized for issue, only 839,000 were used.

The caliber .22 Model 1922, M I rifle and ammunition has been most enthusiastically received throughout the service. The regimental commanders have been practically unanimous in their favorable comments concerning the utility of this weapon for matches and the individuals have shown great interest in small bore competition. In many cases the soldier has purchased the necessary caliber .22 ammunition rather than fire the caliber .30 gallery course, which accounts for the small expenditure of the caliber .30 gallery practice ammunition. The rifle has been found to be very accurate. The problem of cleaning the rifle has been greatly simplified due to the small number of rifles used and the fact that the bores apparently do not lead as readily as when firing the caliber .30 gallery practice ammunition. However, great care must be exercised in the cleaning and care of these rifles. Lack of proper care will result in rapid deterioration of the rifle, with loss of accuracy. As these rifles cost $46.00, the question of replacement is a serious one.

A circular stating the allowance of the caliber .22 ammunition is in the process of preparation. It is expected that it will be issued in the near future. The amount of caliber .22 ammunition that will be authorized cannot, at this time, be stated with certainty.

Training Films for Infantry

THE Signal Corps is planning to revise a portion of the training films now on hand before June 30, 1927. Some 50,000 feet of negative film and 100,000 feet of positive film are available for this purpose.

The Chief of Infantry has recommended that the following Infantry training films be included in the revision: Infantry equipment, films Nos. 20 and 21; how to shoot the rifle, No. 2; pistol shooting, No. 7; target designation, Nos. 18 and 19; and 37-mm. gun, Nos. 26, 27 and 28.

He has also recommended that new films be made covering the following subjects: Organization of the rifle, machine gun, howitzer and service companies, and the organization of the battalion headquarters and headquarters company, and the regimental headquarters and headquarters company.

Studies recently conducted at the Infantry School have indicated the desirability of making training films for use in the tactical instruction of the National Guard, the R. O. T. C., and the C. M. T. C., where terrain and troops are not available. These films will cover such subjects as scouting and patrolling, the Infantry company in defense, and the Infantry company in attack, and will be photographed as conditions warrant by means of a combination of location shots showing the troops in various stages of the exercise. The principles employed will be shown in animated cartoons. This project will require about 6,000 feet of film.

The films depicting Infantry training activities will probably be taken at the Infantry School, using demonstration troops at that station.

The Doughboy and His Weapons

THE March issue of the INFANTRY JOURNAL carried as a frontpiece a photograph depicting the doughboy of today with all his weapons. The picture was made under the supervision of the Infantry Board at the request of the Chief of Infantry and was selected from several photographs to best illustrate the complexity of modern Infantry armament.

The photograph enlarged to 38 inches by 60 inches has been hung in the anteroom of the Secretary of War as a part of the military exhibit which is being collected. A copy of the same size hangs in the Office of the Chief of Infantry and one has been sent to the Infantry School.

The enlargement is very effective and is believed to be the only one in existence which portrays all Infantry weapons in one group. Several inquiries have been received from individual officers as to the possibility of securing a copy of this photograph. Arrangements have been made with the Chief Signal Officer to have copies reproduced in any size desired, at a cost of 70 cents per square foot. The largest size which can be made is 38 inches by 60 inches. The original negative is 8 by 10 inches and prints of the original size may be obtained for 20 cents.

New Method of Mixing Target Paste

A NEW method of mixing target paste has been recently tested by the Infantry Board and found to have a marked advantage over the old method set forth in War Department Document 1052. The new method, suggested by First Lieut. Charles S. Lawrence, 29th Inf., was used by him for about a year on the division rifle range at Schofield Barracks, and proved to be a better method of making the paste and produced a paste superior to the old. The Quartermaster General has advised the Chief of Infantry that instructions would be issued making the necessary allowances for the new paste, and prescribing the new method.

The new method is as follows: "Into a 30-gallon G. I. can, put one G. I. bucket of flour. Add 3 G. I. buckets of cold water, slowly mixing flour and water thoroughly during the addition so as to avoid lumps. Dissolve 1½ cans of issue lye in one G. I. bucket of cold water. Pour this solution slowly into the flour and water mixture, stirring vigorously. Continuing to stir slowly, add cold water to make 30 gallons."

This method of making paste obviates the necessity of boiling, as was necessary when the former method was followed, and saves about one-half the amount of flour. The paste, when made, is not lumpy and does not sour, even after several weeks. Targets, when properly pasted with this paste, resist heavy rains to a considerable extent and rodents do not eat the paste.

Artillery Battalion at the Infantry School

INSTRUCTIONS have recently been issued by the Adjutant General converting the artillery battalion at the Infantry School from tractor-drawn to horse-drawn, effective May 1.

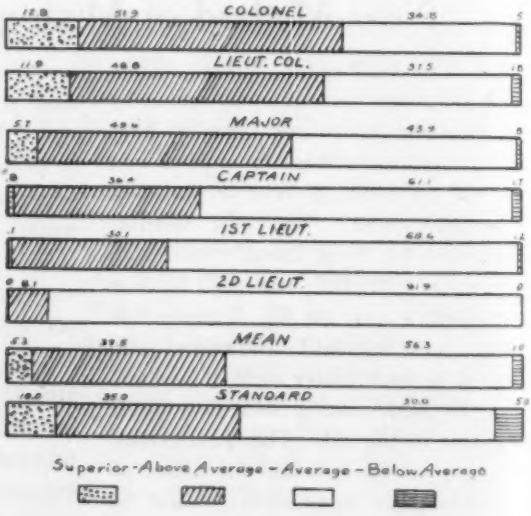
Tractor-drawn artillery is not assigned to the Infantry division, according to our present organization tables, and to have a tractor-drawn unit at the Infantry School to demonstrate the rôle of division artillery was believed to be confusing to the student. In order to present the normal picture of division artillery, namely, horse-drawn, it has been the desire of both the Chief of Infantry and the Chief of Field Artillery to effect the change.

Temporary stables are being constructed by the personnel of the battalion, and animals and other equipment necessitated by the change are being assembled at Fort Benning. The authorized strength of the horse-drawn battalion is 447, while that of a tractor-drawn battalion is 399. No change will be made in the present enlisted strength or ratings until later.

Ratings of Infantry Officers

THE chart shown below illustrates the efficiency ratings of Infantry officers of the various grades in terms of percentages.

The "standard" rating shown is only an arbitrary division. This standard is exceeded in higher ratings in the three higher grades, whereas the three lower grades fall short in the higher ratings.



It is quite evident that officers are not being compared by rating officers with those of similar rank. The tendency of the rating officer is to compare a junior officer with one of higher rank and give him a lower rating accordingly. The classification of junior officers, therefore fails to be of any considerable value, particularly in the case of second lieutenants.

It is recognized that an officer's value to the service increases as he gains experience and rank, and for that reason it is granted that the colonel is of more value to the service than the second lieutenant. However the purpose of the efficiency rating is not to arrive at an officer's value, as compared with all officers, but with officers of his own rank and length of service. There is no logical reason for the lack of "superior" second lieutenants.

Marksmanship Compensation for Tank Units

THE early issue of Training Regulations 420-270, Tank Marksmanship, in mimeograph form, will allow the personnel of tank units to fire a prescribed course and obtain qualification pay. Up to the present time, a course in marksmanship for tank companies has not been prescribed, and even though the principal arms of tank units are prescribed by Army Regulations 35-5380, as the tank cannon and machine gun, the personnel of tank organizations have not had the opportunity to qualify for pay.

Recommendations have been received, pending issue of this regulation, which has been delayed on account of lack of funds to print it, that the personnel of tank organizations be permitted to qualify for pay with the pistol. This proposal has been disapproved and the plan of mimeographing the regulations has been adopted. It is expected that the mimeograph regulation will be issued in time for target practice of tank organizations during the current calendar year.

New Radio Sets for Infantry

UPON recommendation of the Chief of Infantry, concurred in by the Chief Signal Officer, the substitution in the regiment and brigade of the radio set SCR 79-A, for radio set SCR 105, has been approved by the War Department, and equipment tables will be amended accordingly.

Regiments and brigades are at present supplied with the SCR 79-A set for garrison training purposes. The SCR 105 has been the set which was included in the war equipment. Under the present plan the SCR 105 will be eliminated entirely for those organizations and the SCR 79-A will be issued both for peace and war.

A comparison of the two sets is as follows:

	SCR-105	*SCR-79-A*
Weight, pounds	364	569
Wave length range, meters	150-300	500-1100
Range in miles	5	30

The increased weight is a disadvantage but the increased range and the more certain functioning are believed to counteract the increase in weight.

Schools for Enlisted Men

A CERTAIN amount of money is allotted to this office each year for sending enlisted men to special service schools, and has been used primarily for sending enlisted men to the Signal School, Horseshoers' and Saddlers' School, and for sending replacements from the Tank School to various tank units.

Occasion may arise where some regiment may be in special need of certain types of the above training. If the regimental commander concerned will make a request on this office for such special school training, authority will be granted to send an additional man to the school desired, or to send men to other schools, provided funds for such additional training are available. It should be understood that the need for this additional training must be exceptional.

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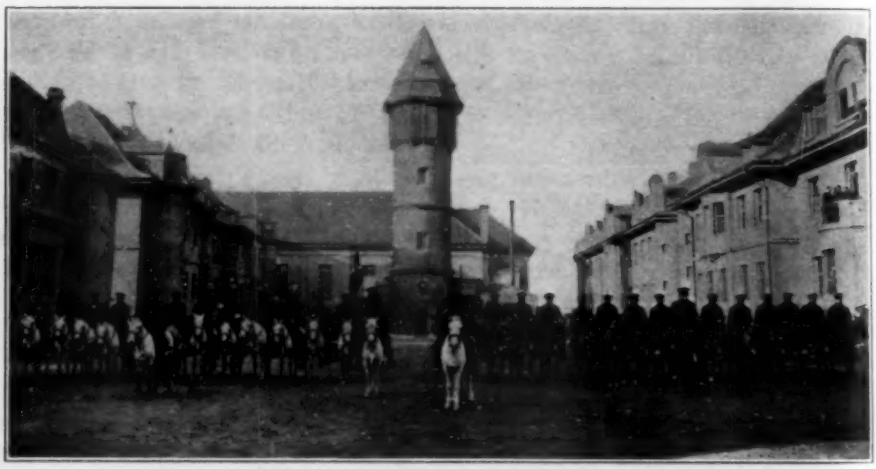
Fatigue Clothing

THE War Department has recently decided that no change in the present issue of fatigue clothing will be

made at this time. A study has been in progress since November with a view to substituting "Cover-Alls Combination" for fatigue coats and trousers and the substitution of the olive drab color instead of the blue color.

As a result of these studies, in which various branches were consulted and the opinions of the boards of the various branches were obtained, the decision was reached that the present type of fatigue clothing, as described in Army Regulations 600-40, would remain standard for issue. The primary reasons for such decision were that the present allows the coat to be removed, whereas in cover-alls, the entire garment must be worn at all times; and shrinkage effects the fit to a less degree in the two-piece type. The khaki color was not deemed advisable because of the seeming impossibility of obtaining a fast dye.

It was further proposed to allow fatigue clothing to be worn at drills, record target practice and field exercises in order that uniforms might be preserved. This, however, was not approved because it was believed that the military appearance of a command would be lowered to such an extent that morale might be adversely affected.



Mounted Platoon of Headquarters Company, 15th Infantry

This platoon was organized to meet the special requirements of the regiment in China. In the constantly reoccurring wars in China, in particular where troop movements take place or fighting occurs in the vicinity of Tientsin, the platoon has proved to be of great value in keeping in touch with the situation, diverting Chinese columns, etc. It consists of one officer and 34 men, formed from all mounted men of Headquarters Company and by attaching and transferring men from the various other companies. The organization is unique in that it is entirely mounted on Mongolian ponies, which range from 13 to 14 hands in height and average about 700 pounds in weight. They are extremely hardy, require very little forage and can carry the average soldier with ease day in and out. Headquarters Company, 15th Infantry, is commanded by Capt. H. M. Henderson and the platoon by First Lieut. J. E. McCammon

Editorial Comment

Progress in Matériel

PROGRESS in the means and methods of waging war will be aided in the future, as it has been in the past, by the adaptation of appropriate products of the inventive genius of a people to the requirements of the nation's defense forces. Inasmuch as we are living in a mechanical age there is certain to be an unusual reflection of this tendency of our people in the pursuit of greater efficiency in the military establishment.

Our Army is carefully evaluating every development of the scientific world with a view to its possible adoption. In addition, it is conducting many laboratories of its own in the numerous fields in which modern warfare requires its research. Although every consideration is given to suggestions for improvement by the capable and energetic officers charged with these matters, they are often referred to as being "steeped in conservatism" because they refuse to be stampeded by suggestions of enthusiasts for revolutionary methods. Improvements on means and methods tried in war are not effected by the acceptance of hasty conclusions, but by the processes of careful and practical application of the laws of logic. So, if to the exponents of purely mechanized warfare, "conservatism" means that the rifle and bayonet should be declared passé, or that Infantry and its supporting fighting men should be scrapped, then we say that the nation can well be happy that it has officers sufficiently hard headed to give rational direction to the destinies of the Army.

Of all the branches of the service, the Infantry is most vitally interested in any plan that will permit the accomplishment of the mission of the Army on the field of battle with the minimum of losses. It will welcome any innovation that will facilitate its own advance to the Army's objective, but it wants to be positively assured that any change affords improvement over the method of today. Just by way of illustration, —if attack aviation can demonstrate by thorough experiment under simulated battle conditions that its bombs and machine guns may have a decided effect on an enemy prior to and during an Infantry attack, and if the results are likely to be commensurate with the human energy expended in making this type of aid possible, then the Infantry will agree that the project should be accelerated.

The Infantryman is of necessity a practical soldier; he is not easily to be led astray by imagined "super" vehicles, machines, or weapons. But the Infantryman is ready to go ahead with a number of projects that have in limited experimentation proved their value; he is anxious that these new weapons be given complete tests on a scale that will enable determination once and for all whether our Army should be equipped with them. There is the tank, for instance, a weapon that has proved its value conclusively for

certain situations on the battlefield. Its tactical usages have been fully demonstrated in diverse situations. The problem now is one of mechanical design and construction that certainly should have been resolved into concrete form by this date, more than eight years after the close of the World War. If we are not ready to proceed with construction of one or more types of improved tanks to replace the war types on hand, then some other method of designing should be pursued. Has serious thought been given to a plan of interesting private industry in developing a tank by the same method as is being used for airplanes? Perhaps we are looking for the *ideal* tank or tanks, rather than accepting the best that our ingenuity can contrive. If we proceed with one or two of the latest designs of different weights, equip battalions with them, we would not only facilitate development thereby, but we would expedite plans for tactical organization to meet the requirements of the weapon. Furthermore, we would have some units equipped appropriately for use in a sudden emergency. Our land forces can no better wait for the declaration of a war to construct huge machines that require long periods for manufacture than can the Navy or the air services. Supplies of late machines must be available and personnel must be capable of using them; newer models will appear, that is inevitable, but we must have a semblance of preparedness today. Our 1,200 odd tanks of World War design are admittedly obsolescent and would likely not be used in a major war unless perforce we would have no others ready.

Similarly, we have in the Stokes mortar a weapon that has been superseded in theory by the new 75-mm. howitzer. How much longer are we going to wait before we get the new weapon into the hands of troops? Can we afford to ill equip our Infantry because we have a large stock of Stokes mortars left over from the World War? Manifestly, no! The American people would and properly should demand that our armies go in the field with the last word in weapons. The near future *ought* to see all our organized forces familiarizing themselves with the new howitzer.

Another Infantry weapon of tremendous possibilities is the automatic shoulder weapon. It presents such great advantage over the present automatic rifle that experimentation on it should be expedited. If we have a practicable weapon of this type today, and many believe we have, no time should be lost in manufacturing it in sufficient quantities so that several battalions can be equipped for extended study of possible mechanical deficiencies and for the development of tactical usage,—the only practical method of reaching proper conclusions.

Our Army has been permitted to engage in much speculation in the matter of transportation by motor. We have models of some first-class vehicles but we have never given an acid test to this method of transport for the Infantry. The Chief of Infantry has urgently requested in his annual reports that a regiment of Infantry be fully equipped with the latest designs of trucks, cross-country cars and tractors to permit a determination of the true value of motorization to Infantry. No money has been authorized to be expended for this project.

What is Britain doing today in testing late motor equipment? Early this month a full field test will be given to a completely motorized command, of appropriate arms, approximating a regiment in strength. And there are funds to permit the work to continue throughout the summer.

Truly, it takes time to develop new means of waging war, but our Army has a number of projects that are now beyond the individual experimental stage. Progress from here on requires more money, and the nation must be willing to gamble in the extensive experimental work as well as it does in the limited field. Our Army is not going to battle in a future war with the left-overs from the last war, and it ought to be realized that now is the time to begin replacement of the matériel that is obsolete or obsolescent. It is an uninspiring commentary that little or no progress has been made in replacement, excepting for a small amount of deteriorating ammunition and a few thousand obsolete gas masks.

To some of the daily press and others who continue to speak disparagingly of the conservatism of the Army we would invite an inspection of the method by which funds for military purposes are obtained. We would also call attention to the difficulties that have been experienced in maintaining the bare existence of a meager-sized Army, obstacles that have operated to stifle existing projects for improving the Army's efficiency.

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Mechanization of Military Forces

THE INFANTRY JOURNAL features in this number a discussion of the subject of mechanization of armies. The leading article is written by Col. J. C. F. Fuller, British Army, one of the pioneers in the field of tank development who has carried on since the war in his advocacy of full and complete mechanizing of all the elements that go to make up a fighting force. His school of thought would relegate the present accepted methods of organization for combat into the discard, eliminating horse-drawn transport of all kinds and encasing all combat troops in vehicles protected by armor.

While Colonel Fuller theorizes largely in his article as to future developments, he will have an opportunity during the coming summer to test a completely motorized unit. This unit will consist of one tank battalion with Vickers tanks, an armored car company with one-man and two-men tanks for reconnaissance, one Infantry battalion converted into a mechanized machine gun unit using half-track motor cars and trucks, three batteries of artillery using full and half-tracked tractors and self-propelled mounts, one pack battery of 3.7-inch howitzers in half-track trucks, one company of engineers with motor transport to carry appropriate bridging equipment, one motorized signal unit, and an air squadron. By means of this unit the practicability of such a command will be given a test. On favorable terrain it should prove its value; through woods, swamps and mountains it will likely not meet with much success in conducting tactical exercises, since it possesses only one rifle company and this as part of the motorized machine gun battalion.

It is interesting to speculate on the limits to which mechanization might go. This sort of discussion finds con-

siderable favor in military circles on the other side of the Atlantic. In the prize military essay of 1926 in the British *Royal Engineer Journal*, Captain Hutson considers mechanization as a process of evolution that will probably pass through three stages: (1) Improvised, in which the aim will be to increase fighting efficiency by substituting mechanical for existing means of transport, with the dominating principle being that of maximum use of commercial vehicles; (2) Partial, that is, in addition to the above, transforming a portion of the army into a definitely mechanized force; and (3) Full mechanization of the army. He states that the mechanical vehicle adaptable to all, or even the most, of the conditions under which British troops may be expected to fight has not yet been produced, and until that time arrives the mechanization of the bulk of the army is out of the question. The mechanization of a division would proceed by substituting tractor-drawn vehicles for first-line transport, by supplying all artillery with tractors and by providing all the marching personnel with trucks—not impossible for application today where there are suitable roads. Mobility of the fighting troops will certainly be facilitated by such an arrangement. The author forecasts that the equivalent of one of the five divisions of the British expeditionary forces will ultimately be transformed into a mechanical force, but the full mechanization, he states, will little concern the present generation. His ideas on the subject are well balanced.

Another British officer, Major General Hambro, in a lecture before the Royal Service Institution recently, discussed the replacement of the horse by mechanical vehicles, but closed with the conclusion that, "What the future holds none of us can foretell, but for the present there is no substitution of the horse by the machine." General Godley, in his remarks following the lecture, called attention to the great difficulties encountered in the landing of machines from ships in an exercise conducted in 1926, a point not to be overlooked in considering mechanization of overseas expeditions.

Capt. B. H. Liddell Hart, a prolific writer on military subjects and one of the theorists who is ready to scrap all present methods of waging war, in discussing the tank, says that this weapon "must quench all hopes of a renaissance of mobility of war." To show to what extent this writer would go it is only necessary to quote: "An Infantry advance in normal country is impossible, except through the lavish use of tanks. But we have not the tithe of the tanks required for such purpose, and even if we had it would be wasteful folly to expend them so unprofitably—to bolster up an arm which is a debt rather than an asset on the balance-sheet of battle." His is the visionary type of military prophet who is interesting only to the extent to which he can dream.

Britain is not alone in the discussion of man versus machine in war. The French have made great strides toward mechanization. The Germans and Austrians are publishing more books on tanks and antitank methods than any other nation.

In an issue of *Wissen und Wehr* (1926), a German military periodical of the more academic type, there appeared an interesting discussion of the

war of the future. The article expresses the opinion that, in time, the entire forces of the army will be transported to the battle area by mechanical methods. It predicts strategical reconnaissance by aircraft. Even the cavalry needed for divisional squadrons (mounted orderlies), for senior officers and for staffs will be carried to the point of deployment by motors. Man-carrying and supply trains will be operated on roads and across country. Corps and armies will have all their special troops motorized. March depths of fighting units will remain the same, but the marching speed will be trebled. Gas will be a particularly important weapon dropped from airplanes and fired from guns. Special efforts will be made to cripple the economic system and sources of power of the hostile people by air power and gas. The author does not believe that the mechanization of movement of troops will bring about the mechanization of leadership or of a preponderance of the technician, but that it will have an opposite effect. The influence of the leader will have a greater bearing on the course of events because of better communication. The leader will be able to exploit more fully the fighting qualities of his troops because of their mobility.

The article states that aircraft and tanks will be employed in battle as mechanical weapons. Neither will be a decisive factor. There is no doubt that antitank methods will be greatly developed and extended, and it is, therefore, probable that the Infantry will advance to the attack supported by artillery and aircraft, and the tank will only be used when the Infantry have reached the limit of the support of their artillery and the enemy defensive system has already been disorganized. In the pursuit, mobility will be a greater asset to the retiring than to the pursuing force, as the former will be able to dispatch fresh troops rapidly to points of vantage. Operations will be conducted more than 100 kilometers from railheads, owing to the increased use of trucks.

The conclusion is a sound one: "Technique and material should not be over-estimated in war. The art of war is subjected to immutable laws, one of the most important of which is that the morale of the Army, its discipline and patriotism, its readiness for sacrifice and its will to fight, form the foundation of victory. The finest technique in the world will not be able to alter the fact that it is the human being who serves the machine in war, and that the machine can only produce its highest performance at the command of the will and morale of the human being. In the motorized army of the future the most important motor will be the spirit and the heart of the human being. On the other hand, nothing more rapidly destroys the value of troops than their employment inadequately armed against a heavily armed opponent."

Symbolic Song for Infantry

"A SONG such as is needed for the Infantry," says Professor Harry L. Hollingworth of the department of psychology of Columbia University, "is essentially a symbol." This is what the INFANTRY JOURNAL hopes will be produced by the contest for the music for a song that will close on July 1, 1927, and for which a prize

of $1,500 is being offered. The music must be a symbol that will express the lofty ideals of the "plodding, hiking, dogged, storming, fighting Infantry."

We believe the words for a suitable song will be forthcoming readily enough, once we get the proper and expressive music. As Professor Hollingworth states it: "Soldiers are not inclined to be very reverential. They make fun of everything, parody everything. The flag, as the symbol of the nation, inspires them with a certain awe, but give them some august object to represent their own particular brand of soldiering, and they are likely to turn it into parody, and not particularly refined parody at that. They will parody the verses of a song, particularly a solemn song. But you can't do much joke-making with a tune. If it is a too dignified melody you can jazz it up a bit, but a lively, spirited tune can scarcely be made ridiculous—even in the Army. Certainly the doughboys will make game of the words. They will alter them in grotesque fashion or perhaps set new and quite shocking words to the tune. But the tune remains intact. Its emotional stimulus lies within itself, and once it is started on its swinging way it quite inevitably exerts its influence. A tune is about the only kind of symbol that the Infantry won't be able to make ludicrous."

In speaking of the symbolism of a song this authority on psychology says:

"A song, of course, or any good rhythmic tune is a famous aid to marching, but the philosophy of chants for the fighting forces goes further than this. It connects with the notion of 'symbols,' so popular in contemporary psychology.

"The universal human instinct is to identify a set of emotional ideas with some fixed tangible thing. The symbol is a necessary instrument in the development of emotional fealties and for arousing them at proper times. The crucifix, the crescent or an idol or other representative object provides a rallying mechanism for religious feeling, the flag for patriotic enthusiasms. These are visual stimulating agents. A slogan or a song is the auditory symbol.

"More than mere patriotism is necessary in the army. Outside of the national esprit de corps there must be various local loyalties, these devoted to the company, the regiment, the particular branch of the military profession. These are smaller loyalties than patriotism, but more immediate and in many ways more effective. They require their symbols.

"The Infantry, the marching and hand-to-hand fighting force, has its own peculiar difficulties, achievements, anxieties and points of pride, which make up a strongly emotional complex. The best symbol for this is a song, especially a tune."

More than 500 song writers have already expressed their willingness to try to produce this symbol of the Infantry in music. Let us hope there will be one that will be sufficiently expressive.

The Hump in Promotion

THE time for Regular Army officers to make known their opinions on proposed legislation to remedy the so-called "hump" in promotion is before any law is passed and not thereafter. Acting on this prin-

ciple the War Department is convening boards in each corps area, overseas department and service school, to make studies of the problem. All grades and principal categories of officers are to be represented. Following the receipt of reports from these boards a board of general officers is to convene in Washington to study the recommendations with a view to preparing a plan satisfactory to the Army and to the War Department, for presentation to Congress.

The basic reason for consideration of this problem is to arrive at some plan by which an even flow of promotion can be secured, if possible, for the 5,800 officers commissioned during the World War period. The hump, will be serious in future years when those at the top of the list will have reached the grade of colonel, whereas others of about the same age and experience will still be captains. The adjustment must obviously be made within the hump itself, otherwise it will remain a hump. Even if there should be a rapid retirement of officers of the grade of colonel or lieutenant colonel, the hump will still exist but in a different place in the promotion list.

The suggested attrition method, whereby a certain percentage of officers would be eliminated each year, met with considerable hostility throughout the Army because it made the Army career one of uncertainty. The Wadsworth bill, which passed the Senate in February, likewise failed to satisfy many, but as a compromise it appeared to have its merits, particularly because provisions for attrition were limited.

It will take more than a sword to untie this Gordian knot.

The Blue Uniform

THERE can be no argument in principle against the wearing of a dress uniform by the defense forces in times of peace. The Navy and the Marines not only adhere to the principle but have overcome all difficulties in putting it into tangible expression. In the Army we have no dress uniform worthy of the name, for at present the difference between formal dress and the field uniform consists in replacing service ribbons by service medals.

As we stated editorially in February, 1925, when recalling the words of the Secretary of War, the late Mr. Weeks, who expressed himself as positively ashamed of the appearance of the uniforms obliged to be worn by the Army, the return of the Army to the blue dress uniform "will continue to be advocated until the readoption." The facts, stated then, are as true today: "A well-dressed soldier is morale personified. The fact cannot be overlooked that morale is the greatest single asset in the operation of an army, whether in peace or in war."

The War Department is considering the question in earnest at the present time. Morale of the Regular Army needs bolstering, and the readoption of the "blues" will aid considerably.

A new uniform may add to the financial burdens of the officer, but that is not so serious as some may believe. Many commanders today require that officers have the last word in the service uniform for dress purposes, that is, high-priced caps, coats, breeches and boots. The blue uniform will permit a scaling down of this cost of the present "dress" uniform, and the service uniform will be used as it

was intended. Besides, no diversity of blue uniforms such as we had before the war is desired,—one should suffice. Navy and Marine officers manage to square their personal budgets, even though they have several types of dress uniforms in their wardrobes. They are proud of the opportunity to appear in dress when occasion demands it, and furthermore they stand out in the eyes of the public when they so appear.

The fact that officers may wear civilian evening dress at social functions does not answer the purpose, for at official social functions the uniform must be worn. This point is forcibly brought out in an article in this issue. The author, Captain Murphy, does not, however, stress a big point of advantage in the return of the blue uniform, and that is *the moral effect on the enlisted men*. The well dressed soldier is a more contented soldier, and hence of greater value to the country.

A New Essay Contest

IN this issue we announce an essay contest that should appeal to the officer who believes in the expression of ideas in a few well-chosen words. We are desirous of having stated in one hundred words or less, "The Mission of the Infantry Officer of the Four Lower Grades." The idea for a contest of this nature was proposed by Maj. C. L. Byrne, Infantry. Try your hand at it. Every one of us should know the answer, but who can state it succinctly.

The Sayre Incident

IN AN article in the January number of the *Oklahoma Legionnaire*, George Chase Lewis explains his controversy with John Nevin Sayre, which resulted in a letter by Mr. Sayre to the Secretary of War calling Lieutenant Colonel Lewis to task for alleged interference with Sayre's right of free speech before the R. O. T. C. unit of the University of Oklahoma. The Secretary of War replied to the effect that Colonel Lewis in the capacity of a private citizen was entitled to express his opinions, and that in so doing he did not reflect the views of the War Department.

In discussing the activities of the communists, Colonel Lewis quotes the following blasphemous song, published in a communist book of songs, called "The March of the Workers":

Onward Christian Soldiers,
Duty's way is plain,
Slay your Christian neighbors,
Or by them be slain,

Pulpiteers are spouting effervescent swill,
God above is calling you to rob and rape and kill.
All your acts are sanctified by the Lamb on high,
If you love the Holy Ghost, go murder, pray and die.

And on page 36 the following chorus:

Long haired preachers come out every night
Try to tell you what's wrong and what's right,
But when asked about something to eat,
They answer with voices so sweet,
"You will eat by and by in the glorious land above the sky;
Work and pray, live on hay, you'll get pie in the sky, when you die."

Reviews and Discussion

Discussion of Correspondence Courses

IN the March issue, Maj. John F. Landis wrote on the subject of the correspondence courses in the Army. There have been an unusual number of reactions, generally favorable to the ideas expressed.

From Fort Leavenworth we learn that the matter of having all Command General Staff Courses graded at the General Service Schools is considered by many as the best way of handling those courses.

AS A RESERVIST SEES IT

A Reserve officer of grade of lieutenant colonel writes:

The criticism is correct but is not severe enough. May I unload some of my troubles?

Army instructors do not like correcting school papers. No special aid or explanation is given; simply approved answers or solutions are sent. No interest is shown towards those who do "bone" and finish courses. Officers graduated from branch schools are not put on correspondence work. Advice is not asked from those who have completed one or more courses. Corps centralization is wrong; too much friendship or disgust. Shorter courses with review and examination better than long courses soon forgotten.

I have learned a lot and have also found time for outside amusement and interests. In 1920 it took me six months to force the army to let me start the course and I have sent papers to Chicago, Boston and New York. At first I could get no texts, but I swore that I would finish all courses or bust. I subscribed to the Leavenworth and Benning mailing list, the INFANTRY JOURNAL and by reading the Field Service Regulations, English, French and American histories and by constant work and pounding, I completed. Incidentally I built up a good military library.

The most interesting thing to me is that all Regular officers agree that the scheme is wrong but none seem able to do anything. Major X agreed with me as to this three years ago.

AN INSTRUCTOR WRITES

Captain George Munteanu, Inf., Executive 358th Infantry, writes as follows:

In the article referred to, the following statement was made: "Cases are known where the instructors either to escape marking papers or because of lack of belief in correspondence teaching have substituted weekly lectures for the lessons contained in the correspondence courses, students being credited with having solved their correspondence lesson; by just what authority, remains unknown."

I am one of the executives and instructors with the Organized Reserves who attempted to arouse the interest of the Reserve officers in the correspondence schools and in the Reserve Corps in general through the means of these troop schools. My authority for doing so is contained in paragraph 99, AR 135-10, which states:

"The various established correspondence school courses or parts of

courses are available for use as bases for conferences at troop schools or at branch schools of instruction . . . Any individual who completes any lesson or lessons of a correspondence course by attendance at such conferences will be permitted to omit such lessons from such correspondence course in which he is or may be enrolled. He will be given credit for completion of such lessons in the same manner as if the work had been performed by the usual correspondence methods."

In my three and a half years experience with the Reserves I found that it is a good deal easier to correct papers than to prepare a conference, and by correcting papers I mean giving the student such personal attention as I am capable of and as the individual case requires.

Granting that the troop school method of instruction is not as efficient as the mailing list correspondence course system, it does, however, arouse some interest on the part of those Reserve officers who do not take any other kind of training.

I suggest that that much of the provisions of the regulations covering promotions (par. 52, AR 140-5) which permits a Reserve officer to take his examination, at any time, by merely requesting the examiner to furnish him a set of questions, be changed so as to require that all promotions be made only upon the completion—through the correspondence schools—of the subjects prescribed, and upon the successful completion of a practical test. In this manner the Reserve officer concerned would obtain some beneficial instruction and it would assure the War Department that he really is capable, to the extent that we are able to teach him, of performing the duties of the grade to which he seeks promotion.

I experienced cases when I prepared a set of questions and endeavored to cover as much territory as possible so as to assure myself that the officer concerned knew the subject; the officer either failed in the attempt to answer them, or frankly stated that he had no time to look up "all those things." In either case if I did not make an enemy I no doubt created an impression that I did not at all intend to make.

By adopting the method I mentioned above I believe that the interest in the correspondence schools will be greatly increased; more enrollments secured, and that more students would complete the work required.

This letter is not written as a criticism of the article in question; I am writing merely to show that those of us who adopted the method under discussion did so by proper authority. I believe we did and are doing some good.

ANOTHER INSTRUCTOR COMMENTS

One instructor states that he was somewhat disappointed in the article, in that no feasible way of improving our correspondence courses was presented. He says:

I must remark that the writer has his subject under fine control and he outlined exceedingly well how certain of our colleges, like Columbia, manage to put over instruction by correspondence. But to expect our Army, as now constituted, to adopt such a system of correspondence courses, is very much like asking a man why he doesn't build himself a 20-room mansion when he is perfectly satisfied to continue living in a two-room flat.

It has been said that all of us are mere fractions of what men might be. There are some of us who can visualize our Army as a fine agency for Americanizing our immigrants, as a great organization for fighting illiteracy in our backwoods districts, and as a wonderful weapon with which to combat disease—all of this without impairing in the slightest the Army's efficiency as a fighting machine. However, the majority of military men are content with things as they are. The 20-room mansion does not appeal to them so long as the flat is available. The most

they will agree to is to add a room at a time.

It is up to a man to keep himself from becoming dogmatic. I try to do this, but to save my life I cannot see how any one can argue the efficiency of correspondence courses as compared with conference courses. Of course a man can be instructed by the correspondence method, and of course our correspondence courses should be improved; these things cannot be denied but my definite conviction is that the very best way of instructing the Reservist is to establish a personal and verbal contact with him. Where such contact cannot be established, the conference course automatically becomes a correspondence course for the out-of-town man who cannot attend the class assemblies. But the class assemblies are the thing—given a competent instructor to preside over them. The opportunity for men to meet and mix and exchange opinions audibly; that alone is enough to justify this method of instruction for the Reservist. And the point is that about three-fourths of our Reservists live in places large enough to assemble groups of very respectable size.

Major Landis plainly understands how weak our system of instruction is. I am for any improvement of the correspondence courses, although from experience, I know mighty well that nothing as ambitious as he outlines will ever be achieved in our Army during our generation. This is not pessimism but what I consider a plain recognition of the situation as it is. If enough of us keep on pecking away at our archaic instruction methods, improvements is bound to come, but it will be by slow degrees.

The French "West Point," Saint-Cyr[1]

By *General* A. TANANT, *Superintendent*

WE WORK looking to the future, and, without pretending, I repeat, to give to young men of twenty years a complete military education, and we are under the obligation to create for them the essential base on which those who wish to work can construct the vast edifice of knowledge which must be possessed by the man who will some day shoulder the great and awesome responsibilities of command.

The instruction comprises two parts distinct in appearance, but which continually overlap, and is so balanced that the theoretical instruction always precedes the practical.

The most important part—contrary to what we see in most of the similar schools of other countries—is unquestionably the *practical* professional instruction, that which the Saint-Cyrien calls "la Mili" as opposed to "la Pompe," that is, the general professional instruction which includes theoretical studies in the military sciences: history, geography, topography, drawing, applied sciences, legislation, administration, etc., and in the other arms: artillery, cavalry, engineers, tanks, the air service, etc. Add to all that the study of a foreign language: German, English, or Arabic.

If it be considered that the purely military part—theoretical and practical—includes today not only the ma-

[1] Extracts from translation from *Revue des Deux Mondes*, by 1st Lieut. R. W. Hubbell, Infantry.

neuvering of troops, but also the use of machine guns, contrivances of all sorts, means of communication, the telegraph, the telephone, radio, etc., it can be understood that the curriculum that must be covered in two years is in itself heavy.

And that is not all. It is not enough, as a matter of fact, that the officer possess the abstract science and the practical science. It is necessary, and it is more important than anything else, that the officer know the soldier, our excellent French soldier, so difficult to understand and to lead for those who are not familiar with him, and who do not love him, but from whom one can obtain anything when one does understand him, when one loves him, and has found the way to his heart. Alfred Sorel again says: "One must love soldiers to understand them, and one must understand them to lead them."

There is the real truth. Say what you may, I maintain that an officer who has not learned this most important part of his profession, and who is incapable of so doing, is not worthy of commanding Frenchmen. He is a good fellow, perhaps, but he is simply a "chevron wearer"[2] and not a French officer.

It is not sufficient in battle to die a heroic death. It is better, and, in fact, necessary to fight the enemy by measuring accurately the value of the lives of the soldiers sacrificed. The officer can acquire this ability only if he has the professional knowledge that inspires confidence, and if he is able at the same time to inspire in his men the affection that he deserves because he himself loves them, and if he is at all times an example of them. Abnegation, honorable principles, and the performance of duty regardless of sacrifice constitute that of which above all else the instructors furnish an example to the cadets, and which they teach them from the first day to the last.

Need I say that everything in the academy tends toward this essential goal. The tradition, fostered and maintained in everything that is worth while therein—the lessons, the talks, above all, their mode of living, everything, in fact, is so arranged that the cadets have constantly before their eyes good examples, and that their conduct, as well as their work, may prepare them to become themselves models, in peace as in war, for their subordinates. . . .

The true Saint-Cyrien lives without care for the morrow. He knows that once in the army, he belongs to himself no longer. Tomorrow he will be stationed in Paris, and a few months later he will be camping in a wheat-field, or in some far-off "bush." He may happen to be quartered in a luxurious château, or in a coal miner's hut, and often he will sleep under the stars. To him this is of no importance. He knows that his life will be a rough one and that he will never make a fortune in his profession. He even knows that he will scarcely receive from his fellow citizens the consideration which his devotion to the state entitles him, and that very often his merits will not be appreciated or recognized. What matter? That is a part of the abnegation. . . .

So long as the youth of our army has the correct conception of its duties that is necessary for their accomplishment,

[2] In the French army commissioned officers wear chevrons on the sleeve instead of insignia of rank on the shoulder.

and so long as it shows itself willing to serve with abnegation, so long will the army have the leaders it deserves. . . . .

If I were required to sum up in a few words the program of the academy I should say: discipline, science, abnegation, or, still more simply, character. . . .

I have said that the old adage, *Mens sana in corpore sano,* applies to the future officer more than to any other citizen. It must be admitted, alas, that our youth has no longer the physical vigor of former generations. Some maintain that this is due to the privations of the war years. I used to think so. I no longer do. Perhaps this deficient condition can be attributed to intellectual over-work, coinciding with the period of intense physical development. Perhaps still it may be attributed to the excess of sporting enthusiasm, to a bad direction given to physical education, or even to the absence of all physical education. It is possible. In any case, it exists.

We must then give some attention to this critical situation and eliminate it as soon as possible. It will do the officer no good to be a highly educated man if he is unable to stand the strain of a campaign, and if he cannot give to his men an example of endurance.

At the beginning, there is Saint-Cyr —the bright sun whose illusions shine through a career of sacrifice and glory; at the end, there is, perhaps, a star or so to be fastened to the sleeve at the price of an untiring devotion, constant effort, and innumerable sacrifices, because the leaders of our army can be and ought to be only those who have served faithfully, and who are still able to serve the nation.

At the beginning of his military career the young officer learns the value of that great word, *service.* At the end, whatever rank he may have attained, the true soldier must be able to say (and this should be sufficient for him): "I have given my best."

History to Appear

THE "History of the 7th Division," which is being published by the officers' association of the division, will soon appear from the press. The book will be 8" x 10", bound in buckram, and will contain over 275 pages. As the edition will be limited orders should be placed now. Price, $5.00 delivered. The Infantry Association will transmit any orders received to the publishers.

Statue of the "Doughboy"

THE Infantry Trophy, presented by the Infantry through the Infantry Association as its contribution to the trophies for the National Matches, but which by whims of Fate is not now in the possession of the Infantry, will again be fought for on the range at Camp Perry next fall. The Infantry Rifle Team is going out to win the Infantry Match and the trophy, and we hope the handsome statue will again grace the office of the Chief of Infantry.

The designer of the statue, E. M. Viquesney, has established a studio and is manufacturing small bronze replicas of another work which he calls "The Spirit of the American Doughboy." The advertisement of his company appears in our advertising section.

Regular Army Infantry Activities

Financing Regimental Athletics

SINCE the recreational funds provided for the Army are quite meager, athletic officers at posts must arrange their athletic contests with great care so as to meet the heavy expenses necessary for the yearly programs. First Lieut. John Weckerling, 22d Infantry, writes a few notes on the past season in his regiment that may furnish ideas to others confronted with the same problem:

That athletic contests are and have been an important feature of military training is accepted. In time of war they are a valuable aid not only in building up the physical man but have an excellent psychological effect in alleviating mental reactions to hard training. In peace time our athletic programs build up esprit and foster good relations with the immediate community by competition with colleges and other service units. There are many regiments that want to make good showings in athletic contests but are deterred by lack of funds. No doubt many units are aided in their endeavors by their post exchanges, but in others these exchanges may be in a bad condition financially, at least not able to purchase equipment or meet the expenses incident to carrying on various sports on a large scale. Consequently the athletic officer may have the additional burden placed upon him of not only providing recreation, good athletic teams and entertainments, but also of providing funds for their maintenance. And unlike colleges and universities, the regiment can not usually depend upon football contests to bear the burden of expense of all other sports.

In the 22d Infantry, the policy, and a good one, was adopted of making the athletic officer supreme in matters of scheduling of games and of expending money for equipment, etc. All the equipment purchased was accounted by the regimental supply officer who kept special stock cards posted for this purpose. The coach had none other than the normal duties of a college coach.

While each regiment will have its own peculiar problems of finances, the plan of staging games with prominent professional or college teams will usually net handsome profits. For instance, the baseball team played the Atlanta Southern League Team a series of two games, with a realization of a very satisfactory sum from the gate receipts. In only one of these games were soldiers charged admission and then only a nominal sum which provided for their families being admitted.

Basketball is practically self-supporting through the sale of season tickets and through guarantees from colleges with whom games may be booked. Some receipts other than the season tickets are obtained usually when the local team plays a popular team from

22d Infantry's Basketball Squad

Tedesco, captain; F. Smith, Sutton, Morrison, Simpson, T. Smith, Sosebee, Lane

the city. The cost of equipment is comparatively negligible.

Football is the most costly of sports, but if properly managed can be made a good source of income for the athletic fund. Last season the 22d Infantry started the season with a lack of equipment and the athletic officer was faced with heavy guarantees contracted with various teams in the Southeast. However, the deficiency in equipment was remedied, and by excellent publicity obtained in Atlanta papers most of the games played at Fort McPherson paid for themselves in gate receipts. This was especially true of the Parris Island Marines-22d Infantry game, in which there was great rivalry. The game was witnessed by almost 3,000 people from the vicinity of the fort.

Situated as this post is near the city of Atlanta little resulted from the staging of vaudeville shows. Bringing second-rate shows on the post at the necessarily higher prices of admission than charged in the nearby city is not good business, and men will attend only from the sense of duty, if at all. However, for a post located off the beaten theatrical path there is nothing better than a good show secured specially for the post. Most of the personnel will attend and will enjoy the show, and the athletic fund will be increased.

In the vicinity of Fort McPherson there is a very intense interest in horses. In the past the aid tendered the civilian horse shows was much appreciated by the officials in charge and as a result the show which was held at Fort McPherson on November 7 was a decided success financially and otherwise. A considerable sum was obtained from the printed program in which advertising space was sold to merchants of the city. A horse show can be held with a minimum of expense, and is an activity which is not only to be recom-

mended from a financial standpoint but from the point of making contacts with the civilian population. Good publicity resulted from this show and, of course, resultant good feeling between the post and the community.

The 22d Infantry has just made a start in polo, but in order to establish the ground-work for future competitions arranged a tournament December 8, 10 and 12. While not a financial success, due altogether to the extremely bad weather prevailing on those dates, the play was good, competition excellent, and interest aroused in future tournaments so that the promoters believe that they were amply repaid for staging the show. Polo, after the initial expense is borne, is a paying game, since it is a sport in which the civilian community is not very familiar, but none the less manifests unusual interest.

Summer Camp Publicity

IN every camp next summer some arrangements must be made for appropriate publicity. This is essential, especially for the C. M. T. C., whose success from year to year is largely dependent upon a continuing favorable publicity. During the period the boys are in camp the opportunity is the best for obtaining space in the smaller newspapers, and every advantage must be taken of it, not for the effect on this year's camp, but for next and succeeding years. This is in consonance with the principle that governs the War Department in its relations with the press, i. e., that the public is entitled to the information requisite to an understanding of the questions bearing on national defense, and has therefore an interest in the activities of all parts of the military establishment.

An examination of the program for a camp's activities will at once reveal a number of opportunities for favorable publicity, such as the following: preparation for the camp, arrival of the citizens, drawing of the uniform, taking over of camp from the Regulars by Reservists, ceremony of the oath, Parents' Day, track and field meets, target practice, ceremonies, messes, and graduation. Besides there is always present such personal features for write-ups as "home town" groups or the tallest, shortest, fattest trainee, scholastic or collegiate athletes, brothers, veterans of other camps, or other outstanding features which are recognized as news from the viewpoint of the paper to whom items are furnished.

For a small camp one officer and at least one enlisted man should be detailed exclusively on this publicity work, and they should be provided with suitable office facilities. If a camp paper is to be operated a larger personnel will usually be required. Management of the publicity will be dependent upon the temperament of the publicity officer. Constant personal visiting and observation in the encampment will be essential to the discovery, and utilization, of news. Probably less than half of the material hewed out will ever get into print. Probably less than 5 per cent of what gets into print

will ever come to the attention of the publicity officer. The publicity officer must make up his mind to work hard, without regard to hours or personal recreation. At those very times when others are enjoying sports, he must be "covering" the events, and then working late to get the material to the press before it is too cold and old to be news. Successful publicity requires great initiative, ceaseless effort, tact, and sound judgment.

In organizing for publicity certain steps are necessary. The command must be informed of the appointment of a publicity officer, and instructions must be issued directing that all material for publication, which relates to camp activities, must be submitted to the publicity officer, and that all requests from newspapers and reporters must be referred to him. The publicity officer, the adjutant, the plans and training officer, the athletic officer, the recreation officer, and the executive officer should be instructed verbally by the commanding officer, informed as to his personal views on publicity, and directed to cooperate.

The publicity officer should secure from the C. M. T. C. officer of corps area headquarters as early as possible a complete list of citizens designated to attend the camps with the home address of each. This will enable good distribution of a "preparation" story to all home town papers before camp opens. The full list should also be given to the local papers, the State news service, and the Associated Press. "High-light" biographies, listing military or athletic achievements, should be secured from the Regular Army officers for use with the "home town" newspaper stories. The publicity officer should become personally acquainted, with the staffs of local papers, to arrange for cooperation. These agencies should be approached with the avowed intention—not of asking for publicity help—but of arranging camp news and photographic facilities to assist the agencies. Definite understandings should be arrived at as to methods of cooperation and inter-communication. It is best to have a news event in prospect to enlist their attention; not a "canned" story all ready, but a suggestion that such and such a story might be secured. The publicity officer should prepare a questionnaire to be filled in by each citizen trainee upon arrival, which should be combined with data about the trainee's company commander, to make a story for his home town paper. This questionnaire should contain space for data regarding: Name, home address, school or college, athletic teams played on, employer, name of parent or guardian, previous military training or service, company to which assigned, and name of newspaper in home city.

Individual stories should be mimeographed with spaces for names and addresses left blank—to be filled in on the typewriter before release—and should be mailed direct to the editor of the paper in the town from which the citizen comes.

The people should know what is going on at our summer camps, and it is as much of a duty of the commander of a camp to see that the best arrangement for publicity is given as it is for him to manage efficiently the other administrative details of the camp.

Administration for the Company Commander

By Colonel W. K. Naylor, *13th Infantry*

UNDER existing regulations, administrative duties are subordinated to military training, yet this is extremely difficult to carry out if one has an inexperienced staff that does not know the accepted method of administrative procedure. Experience covering many years has taught me that to insure a maximum of time with troops, it is necessary to have administrative duties properly and timely performed.

In the 13th Infantry and the Infantry post of Boston Harbor, every officer is furnished with a copy of a quiz that pertains to him, and he is required to certify that he can satisfactorily answer all questions. This has resulted in more efficient administrative work, less letters of explanation for failures and delays and consequently less paper work in general. As a result, the commanding officer can get out with the troops and see that "field efficiency is not made subordinate to routine administration."

The quizzes prepared for the regiment are eight in number, covering these subjects: the company, the post quartermaster, the guard and prisoners, the recreation officer, the post exchange, the medical department, the post commander, and the personnel section.

The following is the quiz, issued on December 1, 1926, pertaining to the company commanders:

INSPECTIONS

1. What was the date of the last inspection? Is there a copy of the report with statement of corrections made on file in the company?
2. What are the Commanding Officer's orders in regard to inspections? (Par. 5, AR 245-5 and par. 13, TM-1, 13th Inf.)
3. Do all officers and enlisted men, except sick, guard and those specially excused by the Commanding Officer, attend inspections? (Par. 5, AR 245-5.)
4. Are inspections held as required by par. 5, AR 245-5?
5. Is the physical inspection required by AR 615-250 made about the middle of the month by the surgeon? Is the Company Commander present?

SANITATION

1. Is attention paid by the Company Commander to sanitation in his area as required by par. 2, AR 40-205?
2. Are the facilities for bathing adequate? What check is kept on the men bathing?
3. Do your men bathe once a week? Do they wash their hands before each meal and immediately after visiting the latrine? Do they brush their teeth daily? Are their finger nails trimmed and clean? Is the hair kept cut short and are beards trimmed?
4. Where do the men have their laundry work done? Are there facilities in the barracks for the same? Is only soiled clothing kept in barracks bags?
5. Is particular attention given to inspecting the body for cleanliness at the physical inspection? (Par. 7, AR 40-205.)
6. Are the permanent and prospective food handlers examined by the Surgeon? (Par. 12, AR 40-205.)
7. Is a list of the permanent food handlers posted in or about the place where they are employed (kitchen or dining room)? (Par. AR 40-205.)
8. Are inspections made of men on duty in the kitchen, mess hall and bakeries before going on duty? (Par. 13, AR 40-205.)
9. Are ice boxes kept scrupulously clean? Are they elevated at a height above the floor to permit the inspection and cleansing underneath? (Par. 13, AR 40-205.)

Editor's Note—Col. W. K. Naylor informs the Infantry Journal that he has on hand a few mimeographed copies of the eight quizzes which he will be glad to furnish such regimental commanders who may address him.

10. Are all cooking utensils, mess kits, etc., thoroughly washed with soap and hot water after each meal, then rinsed in hot water, drained and air dried and protected from dust? (Change 1, par. 14, AR 40-205.)

11. Are proper sanitary precautions used with dish toweling if the same is used in the kitchen? (Par. 14-b, AR 40-205.)

12. Are the vehicles for the transporting or holding bread, fresh meat and the like exposed food supplies kept scrupulously clean? (Par. 11-b, AR 40-205.)

13. What protection is there against flies? (Par. 21-c, d and e, AR 40-205.)

14. In summer what protection is there against mosquitoes? (Par. 20-e and f, AR 40-205.)

15. How is your garbage disposed of? Is garbage transferred from can to can or from can to cart during the collection at company kitchen? (Par. 15, AR 40-205.)

16. Are there any bed bugs in your barracks? If there were how would you get rid of them? (Par. 23, AR 40-205.)

17. Is the capacity of each dormitory or squad room stenciled upon the door as follows: "Authorized capacity, ... men"? Have you figured the air space in your barracks to see that there is at least 60 square feet of floor space and 720 cubic feet of air space for each man? Where the space between side bars of adjacent beds is not five feet do the men sleep with head of one man opposite the feet of the next man? Are any of your beds grouped? (Par. 19, AR 40-205.)

18. Are the health lectures on the basic principles of hygiene and sanitation and preventative measures for venereal disease conducted in the company by the company officers? Do the medical officers ever assist? (Par. 4, AR 40-205.) Is entry to that effect made on service record?

19. Do you think your men understand the principles of personal hygiene? (TR 113-5.)

PERSONNEL

1. Is the company divided into squads with each squad in the charge of a noncommissioned officer? (TG 27, 13th Inf.)

2. What officers and enlisted men are excused from daily drills?

3. Are the noncommissioned officers well instructed? (AR 245-5.)

4. Do the squad leaders understand their responsibilities? (Par. 4, AR 245-5.)

5. Do any of the noncommissioned officers perform duty or carry on any occupation inconsistent with their rank such as barber, agents for laundries and similar positions? (Par. 8-f, AR 245-5; Cir. 34, W. D., 1907.)

6. What men sleep out of quarters?

7. Are there any company bankers or percentage men? (G. O. 52, W. D., 1911.)

8. What is the number of recruits received since last inspection? What is their source, character, fitness, etc?

9. How long are recruits kept under instruction before they are taken up for duty?

10. How many desertions from the company in the last twelve months?

11. In dealing with men do the company officers comply with the provisions of par. 3, AR 600-10?

12. Are certain of the Articles of War read and explained to the company every six months as required by A. W. 110, and par. 3, AR 600-10?

13. Is guard duty ever given in lieu of other punishment?

14. Do company officers perform periodically all company duties? (Par. 3, AR 245-5.)

15. Are all company officers properly instructed in keeping the company records? (AR 245-5.)

16. Are selected officers and enlisted men instructed in the use of reconnaissance equipment? (Par. 2-b, c, AR 210-70.)

MESS

1. Is all the money accruing from ration savings used solely for the purpose of food and refreshments for the company? (Par. 16, AR 30-2210.)

2. Is the company mess supervised by the company commander? Is there an officer detailed as the company mess officer? (AR 245-5.)

3. Is a menu made out daily and are the meals prepared as prescribed by the menu? Are the menus kept on file for future references?

4. Is mess under direct charge of a N. C. O.? (Par. 6-c, AR 245-5.)

5. Does the Mess Sergeant keep Q. M. C. Form 86 (Monthly Mess Account)?

6. Has the company two copies of the Manual for Army Cooks? (Par. 296, AR 1913.)

SHOES AND FEET

1. Are the men instructed in the proper method of caring for the feet? (Par. 7, TR 113-5.)

2. Does a commissioned officer supervise the measuring of the feet and proper fitting of shoes? Have you (company commander) ever reported to the Regimental Commander the fact that you have failed to secure proper shoes for your men? Do you make a record of the number of pairs, sizes, and widths of shoes issued your company? (Par. 2, AR 850-125.)

(To be continued)

Here and There With the Infantry

THE Infantry School's baseball team won the series of three games from the University of Michigan early in the season at Fort Benning.

THE COMPANY HONOR test held in the 10th Infantry in March was won by Company F, Capt. M. E. Halloran, commanding. Company B was a close second.

THE 65TH INFANTRY celebrated the 28th anniversary of its organization with appropriate exercise and celebration at San Juan, Porto Rico, on March 24.

THE 15TH INFANTRY in China lost the seventh and final basketball game of the very closely contested series of 1927, to the Marine Guard of the Legation at Peking. Both teams had won three games prior to the deciding game.

FUNDS ARE being raised by the citizens of Atlanta to provide a swimming pool for the 22d Infantry at Fort McPherson. If the necessary $4,000 is donated the pool will be constructed by the soldiers of the regiment.

TIENTSIN, CHINA, is far enough north so that the climate provides plenty of ice for skating. On February 3, the 15th Infantry held its annual inter-company skating tournament. The Connor Trophy was won by Company G for the second consecutive year.

THE POLO TOURNAMENT at the Infantry School is in full swing. Four teams are entered,—Freebooters, 29th Infantry, Students and Artillery.

COL. WAIT C. JOHNSON'S 24th Infantry baseball team is going at full steam, and is defeating all comers. The team plays all the prominent colored amateur and college teams in the South.

Skirmish Drill on Skis

A part of the winter training program of the 3d Battalion, 2d Infantry, at Fort Brady, Mich. The Commander, Maj. Cary I. Crockett, required an extensive period of practical instruction in field fortifications in the deep snow (2½ to 4½ feet deep), which provided all the reality of the trench construction with a relatively small effort in the excavation

THE 42D INFANTRY'S polo team defeated the 4th Artillery team in the Department tournament game on March 27. The doughboy team bids fair to repeat its victories in the tournaments of 1925 and 1926.

THE INDOOR athletic season closed with a number of indoor meets in the various regiments. Headquarters Company won the meet in the 15th Infantry; Company C won in the 10th.

THE BASKETBALL championship of the 10th Infantry was won by Company F. In the 3d Battalion, 12th Infantry,

Company M took the honors.

BASEBALL has begun in earnest in all Infantry commands. The 11th Infantry's team has a strenuous schedule ahead of it for the summer. In the 2d Division there are two leagues with the 1st, 9th and 23d Infantry regiments in one league and the 20th Infantry in the other. The 1st Infantry has already held its "little world series," with the Service Company the victor.

THE FINALS of the largest track and field meet ever held in the Eighth Corps Area will take place on June 2 at Fort Sam Houston, Tex.

ALL REGIMENTS are busily engaged in preparing for the summer C. M. T. C. The 20th Infantry, commanded by Col. F. L. Munson, will care for the Fort Sam Houston contingent this year.

THE FOURTH annual northwestern rifle tournament will be held at Fort Missoula, Mont., May 3-8. The 4th Infantry at the fort has been very active in the establishment of these matches and in their continuation.

THE INFANTRY School Glee Club presented the Gilbert and Sullivan opera, "The Pirates of Penzance," in a masterly manner on March 25. Fort Benning is fortunate to have a large group of high class vocalists, and an expert musical director in Capt. Charles A. King.

FORT BENNING horsemen, as usual, won many honors at the annual Augusta (Ga.) horse show.

Basketball Champions of Second Corps Area, 1927
28th Infantry's Team

THE 29TH INFANTRY'S horse and transportation show held recently was an unusual success.

THE 7TH INFANTRY of Vancouver Barracks and the battalion of the 4th Infantry at Fort Lawton assisted in the production of the moving picture, "The Patent Leather Kid," at Camp Lewis, in April.

THE 8TH INFANTRY entertained the ball players of the Rochester (N. Y.) team of the International League at Fort Screven, Ga., on March 20. The team reciprocated by inviting the regiment to a game in Savannah.

THE BASKETBALL championship of the Fifth Corps Area was won by the team Fort Benjamin Harrison, Ind. Ten of the members of the squad were 11th Infantrymen.

COMPANY K won the regimental basketball championship of the 11th Infantry. Headquarters Company, 16th Brigade won the court honors at Fort Howard, Md.

Items on the National Guard

Demonstrations of Riot Duty[1]

By CAPTAIN JOHN W. O'DANIEL, *Infantry*

THE Regular Army Infantry detailed as demonstration troops with the National Guard of New Jersey for the summer encampment at Sea Girt in 1925, was requested by the commanding general to give demonstrations in riot duty and explain formations of the various movements to each National Guard regiment.

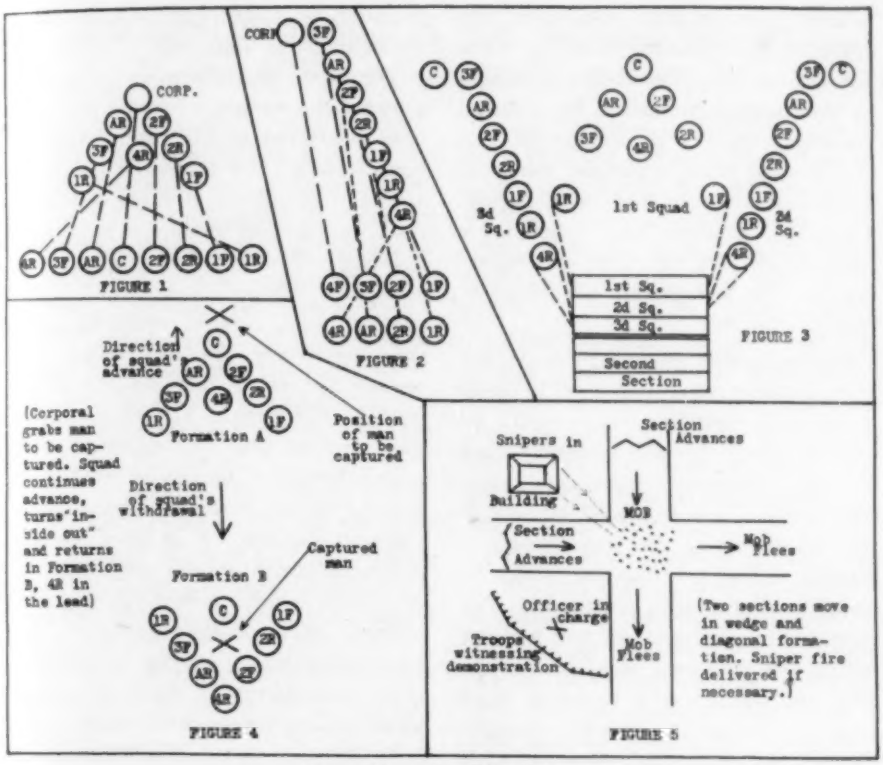
In preparation for the demonstrations all available books and pamphlets were read and digested with the idea of assembling the meat from all of them. Keeping in mind the fact that methods of deployment had changed since the publication of the pamphlets and also that there were no regulations on the subject, we prepared our own formations, based on Training Regulations as to deployments.

For example, to "form wedge" from skirmish line the corporal of the squad signaled "Form Wedge" by raising his arms above his head and bringing his hands together in the shape of a wedge; at the signal the men moved up behind him, the rear rank scout moved over to the left of the squad; No. 4 took his position in rear of corporal (See Figure 1, next page). By using this formation the scouts are on the flanks acting as scouts, and the auto-rifleman is near the corporal, where the fire can be controlled.

To form "Diagonal Right" and "Diagonal Left," the corporal signaled by raising his right or left hand and arm with fist closed to the height of his shoulder, and moving his fist up and down rapidly between his shoulder and his waist. At this signal the squad executed left by file and uncovered in echelon to right or left; No. 3 front rank placed himself abreast of the corporal. The auto-rifleman was in the rear of the corporal (See Figure 2).

To form a combination "wedge and diagonal" from a column of squads, the platoon leader commanded, "Wedge, Diagonal, March," or signaled, using a combination of the signal for the wedge with the signal for the diagonal by first giving the wedge signal and then following it by either diagonal signal. At this command or signal each section, being in column of squads, executed "As Skirmishers,

[1] EDITOR'S NOTE—The Training Regulation on the subject of Riot Duty is in process of preparation under the direction of the Chief of Infantry. The latest War Department document on the subject was "Military Protection, United States Guards" (1919) but is no longer procurable. There have been a number of private publications on the subject, but practically all are out of print. "Military Aid to the Civil Power" (Dowell, 1926) treats of the broader aspects of civil disturbances, but does not include the minor tactics.



Formations for Riot Duty

Guide Center," and then the center squad formed a wedge and the flank squads formed diagonals (See Figure 3).

Besides preparing the demonstration troops in the proper execution of the formations described, arrangements were made to illustrate various other dispositions of individuals and troops in riot duty. The first part of the demonstration included an illustration of the methods of firing from the corners of buildings and from windows, of using shadows as concealment, and of observing from the interior of a building. For this part of the demonstration, the training regulation on scouting and patrolling was followed. Previous to the demonstration each group or squad was given a number by the instructor, so that all that was necessary to have a certain part of the demonstration given was for him to call the appropriate number.

The class, consisting of a peace-time regiment, was assembled in a semicircle, with the instructor in the center. Following an introductory talk on military protection in peace time, the demonstration was begun with these remarks: "I will now attempt to demonstrate the correct way to fire from opposite corners of that building." Previous to this no man taking part in the demonstration had been seen. At the Command "Number 1," the two men in this demonstration ap-

peared from opposite corners of the building with rifles pointed at the class. The instructor then called attention to the correct method. He stressed the point that all that could be seen of the man firing correctly was part of his hat, his right arm, and his rifle, while the incorrect man exposed his whole body. All the other demonstrations in this group were conducted as was the first one.

Following this group, the instructor next demonstrated the way to form wedge and how the wedge could be used in going through a crowd to get a man. Previous to the demonstration one of the men placed himself in rear of the class. He was dressed in fatigue clothes so that he could be readily recognized by the squad. The class was requested to rise and without telling the observers what was to be done the squad, with bayonets fixed and at "Guard," moved straight through the crowd and came out with their man. The crowd opened up, naturally, and let the squad through. The squad was then placed before the crowd with the captured man out in front of the corporal (See Figure 4). This demonstrated the fact that out of the thousand men present viewing the demonstration there were a thousand different ideas about what was going to be done, while the one squad had but one idea, which was the reason for the success of the movement.

Next on the program are shown the diagonals, both right and left, and the use of both, followed by the combination movements of the wedge and diagonal right and left. Another demonstration was that of advancing down a city street in which resistance in the form of sniping was expected. The training regulation on scouting and patrolling was followed.

The last demonstration was one showing the method of advancing on a mob assembled at the intersection of cross streets. For this show two men, armed with rifles and blank ammunition, were placed on top of a near-by building. The street intersection was made by driving tent pegs in the ground in two parallel rows with white tape connecting the pegs. One row crossed the other forming the intersection (See Figure 5). One platoon was used in this demonstration, one section being at the end of one street and one section at the end of the other. The mob consisted of the other platoon of the demonstration company, the men of which were garbed in fatigue clothes. At a whistle report from the instructor followed calling the number of the demonstration, the two sections began moving up the street toward the mob. The rioters began milling about, yelling and fighting among themselves, now and then making threatening gestures toward the advancing troops. Both sections timed the rate of march so as to arrive simultaneously at the "city square." As they neared the "mob" one of the disturbers raised his arm and threw a missile at one of the sections. Before the missile had landed both snipers on the building fired and the thrower dropped to the ground. The two sections brought their rifles to guard and quickened their step. The crowd broke up at a run and fled down the two open streets.

It was found that by having everything ready before the class arrived with all the demonstration troops out of sight that an element of curiosity was created, thereby getting the attention of the class.

Tactical Training in the National Guard

By Brigadier General L. C. Bennett,[1] *Minnesota N. G.*

IN notes on National Guard Training, issued by the Militia Bureau, the mission of the National Guard is stated to be that of augmenting the Regular Army in sufficient numbers, sufficiently organized, trained and equipped, to defend the United States from an enemy while the man power of the nation is being mobilized, and to continue to function as *first line* troops from the call to such Federal service until the emergency has ended.

The objective of training to accomplish this mission, is combat efficiency of the highest tactical organizations, and which, of necessity, includes the combat efficiency of all their components.

In General Orders No. 9, War Department 1926, the following is stated:

A distinct improvement was made in the training of the National Guard. Better understanding was evidenced in the methods of leadership and training in the lower echelons, and with this has come an improvement in the application of combat principles in platoon and company organizations. Progressive and more advanced training for the senior officers of the National Guard requires further attention.

From the foregoing, it is clearly indicated that the National Guard is expected to take its place with the Regular Army during an emergency and function as first line troops. The nature of the emergency may be such that there will be no time for training after the call into Federal service. The Regular Army and the National Guard may be, by necessity, forced to take the field immediately and enter combat. Under such conditions, there would be no time for the tactical training of officers and organizations. This makes it imperative that tactical training be carried on during the armory and field training periods. In the past, the greater part of combat training has been conducted during the field training period and the best results have not always been obtained, due to lack of preliminary preparation during the armory training period.

We have little trouble in the basic training of officers and organizations, but encounter considerable difficulty in carrying on combat training during the periods between camps. Many officers consider it almost impossible to conduct such training in the armories. I believe, however, that a great deal can be accomplished during the armory training period. We should at least, during this period, carry on instruction in combat principles. A thorough knowledge of such principles is necessary as a foundation for tactical studies.

The question that confronts every officer responsible for the training of an organization is, "How can I conduct such instruction so as to obtain the best results and prepare my command for practical combat exercises during the field training period?" This may appear a hard question to answer, but I shall attempt to make some suggestions which may be of assistance.

[1] General Bennett (Colonel, Infantry, R. A.) was recently appointed brigadier general of the newly organized brigade of the Minnesota National Guard, with which he is on duty as instructor.

Our present Training Regulations cover combat principles for the squad, section, platoon, company, battalion, regiment, and brigade. I believe those pertaining to the company can and should well be used during armory training. Due to lack of facilities for practical instruction, the instruction will necessarily be confined to talks by the company officers. Using the blackboard during such talks will be advisable. By such means, all members of the organization should acquire a good general knowledge of the combat principles involved, leaving only the methods of application in different situations. This latter phase can be taken up during camp and, in some cases, prior to camp where outdoor drill space is available.

In combat instruction, great stress should be placed on the instruction of officers and noncommissioned officers, but the men should also be included. This will require preparation on the part of officers, but their efforts will be well repaid by the interest taken by the members of their organizations. In addition, it adds an intensely interesting subject to the training program.

Besides the Training Regulations, we have the Army correspondence courses. These courses are prepared for use by officers and selected noncommissioned officers, and are of great assistance in the combat training of a company, since much of the subject matter can be passed on to the organization.

The National Guard Regulations require field officers to devote sufficient time to the supervision of the instruction of the units of their command to insure proper and uniform instruction. In addition, the regulations require these officers to devote a part of each drill period to tactical and administrative studies. Of the two, tactical studies are the more important. The quotation from general orders mentioned that "progressive and more advanced training for the senior officers of the National Guard, requires further attention." This indicates a policy designed to place the training for these officers on a higher plane and to prepare them for the important responsibility of leading the larger units in combat. To accomplish this, field officers should devote the greater part of their time to tactical studies.

CORRESPONDENCE COURSES VALUABLE

My experience and observation since I have been on duty with the National Guard convinces me that the best method of conducting this class of training is by means of schools throughout the year and by the use of the Army correspondence courses. Where there are several field and staff officers at the same station, tactical schools can well be held. When there is but one field officer at a station, the correspondence course presents a means by which tactical knowledge can be gained.

Many officers are now taking the correspondence courses and some organizations are conducting tactical schools. This should be made the rule in all organizations and all field officers should be required to attend tactical schools or take such correspondence courses as are designed to give tactical instruction.

Instruction that will instill confidence in officers, develop leadership and prepare officers to make prompt and correct decisions on the battlefield is of vital importance to the National Guard.

Rations at Minnesota Camps

THE Minnesota National Guard has had unusual success with its plan of operating messes at its summer camps of 1925 and 1926, and for next summer its scheme of ration procurement and mess management is already completely arranged, even to the menus for each meal.

The State authorities are convinced that National Guard troops in the field can be subsisted properly at a ration allowance of not to exceed fifty cents per day by the issue of a ration in kind, and that supplementing the ration by purchases from outside sources is unnecessary. They do it in the manner to be described.

A careful estimate is made of the probable attendance at the field training camps and, based upon this estimate and a standard menu, the quantity of each component of the ration is computed. The regimental supply officer prepares his requisition from these data, and then circular proposals are mailed to the leading business firms. Deliveries of all staple articles are made to the regimental supply officer two days prior to the arrival of the troops at camp, while perishable articles are delivered daily to the supply officer for distribution.

It is foreseen that even with a standardized menu identical for all units, no one will use the same quantities because of greater skill in handling and preparation of the ration by some units. To offset this condition, it is arranged that each morning at the time of the daily issue of the perishables, a daily stock inventory is submitted by the unit mess sergeant to the supply officer. Adjustments of overages and shortages is then made by the supply officer. No difficulty has been encountered in securing a correct inventory, as the incentive for hoarding is eliminated and unit commanders are convinced that the ration will be more than ample. The staple part of the ration will be issued for ten days and then for a five-day period. All adjustments required by the ration return are to be made during this latter period.

All perishables are to be purchased in the open market. In the meat component, no bulk issues of quarters will be made. A contract will be let in exact accord with the menu. For example: If the menu calls for beef steak, the required number of beef steaks will be delivered to the kitchen and if the menu calls for pork chops or other meat, the same method will be employed. This eliminates waste and labor.

When the plan was first tried in 1925 it was the unanimous opinion of all concerned that it was the best system yet devised; that it was ample as to quantity, of high quality and sufficiently varied. This ration was furnished at a cost of forty cents per day. In 1926 the same plan was used and the experience of these organizations was similar to that of 1925. Regimental and unit commanders reported that the morale of the organizations had been increased immeasurably. The operation of the service supply during the 1926 camps was difficult in the extreme, as it involved motor deliveries over a distance of 186 miles. Despite this fact, there was no break in the service.

North Carolina Celebrates

THE National Guard units of Charlotte, N. C., are preparing to assist in the celebration to be held May 20, in commemoration of the 152d anniversary of the signature of a declaration of independence from the English government by a few Mecklenburgers. General Summerall, Chief of Staff of the Army, and many other notables will be present.

The date of the State and Federal armory inspections of Company F, 120th Infantry, and two companies of the 105th Engineers, April 4, was the occasion for a general military celebration in Charlotte, which included a luncheon by the local chapter of the R. O. A., a program at Davidson College, and a military banquet by the Chamber of Commerce.

Company E, 132d Infantry, Wins Rifle Honors
This company of the Illinois National Guard won the annual indoor rifle company team match of the N. R. A., in the Sixth Corps Area. Top row, left to right: Corp. B. J. Connelly, Corp. Edw. J. Dunne, Sgt. R. B. Greig, Pvt. S. Samko, Corp. Jos. Petted. Seated: Corp. S. D. Warner, Capt. Robt. M. Spears, C. O.; Lieut. F. D. Gibson, team coach, and Corp. E. S. Jeppesen

Cash Prizes for Attendance

THE 132d Infantry, Illinois N. G., has an elaborate plan for awarding cash prizes to individuals and organizations for procuring recruits and for stimulating attendances at the 1927 camp. The prizes awarded to companies must be spent by the organizations for the benefit of the organizations.

The commanding officer, Col. Fred E. Rand, has prepared a folder for each member of the command. It contains "The Soldier's Creed," information on the coat-of-arms, a brief history of the regiment, as well as a charge to the men of the regiment by its colonel.

Experimental Machine Gun Carts

The experimental machine gun carts, designed at the instance of the Militia Bureau by the Ordnance Department, will likely be an issue to all machine gun units of the National Guard as soon as the funds are available. Before the final adoption of the cart as designed at present, eight of the carts are to receive a thorough trial by two separate National Guard machine gun companies under varying conditions of service. As a result of the tests there may be adjustments and corrections of any defects found.

The cart being tested is much lighter than the present type, has rubber tires, ball-bearing wheels, a handle for manual draft, an attachment for trailing, and shafts for animal draft. The idea of the cart is to provide transportation for the guns and ammunition during peace time, and perhaps during part of the training after mobilization, until whatever vehicle for transportation of machine guns prescribed for the Army at that time can be procured.

Champion Basketball Team, Waco, Texas

Team of Company K, 143d Infantry, Texas N. G., which won the championship of the Waco City Commercial League the past season. From left to right—Back Row: Capt. I. N. Rainbolt, Sgt. H. C. Tonahill (manager), Pvts. H. H. Parker, C. E. Carpenter and J. R. Russell, Maj. A. Tucker, Lieut. G. J. Barron. Front Row: Corp. C. H. McLemore, Pvts. R. G. Winchester, Lieut. G. S. Creasey (team captain), Pvt. T. T. Saxon, Corp. H. F. Menke, "Cooter" Rainbolt

Turn-Over in Militia Bureau

THERE will be a turn-over of personnel in the Militia Bureau of the War Department of five officers during the coming summer. Three of the replacements have been detailed: Lieut. Col. G. B. Comly, Cav.; Maj. C. A. Selleck, F. A., and Maj. A. L. Webb, C. A. C. Those to be relieved are: Majs. Alvin Colburn, Inf.; B. L. Jacobson, F. D.; Clift Andrus, F. A.; K. B. Lord, F. A., and Lieut. J. C. McArthur, Inf.

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N. C. O. School, 145th Infantry

THE school of instruction for noncommissioned officers and certain selected privates of the Cleveland units, 145th Infantry, Ohio N. G., which was begun in October, 1926, was recently concluded. Attendance was voluntary and the course was of fourteen weeks' duration, with one session weekly. It was divided into three parts; two preliminary sessions and two semesters of six weeks each, followed by a final examination. The purpose, in brief, was to acquaint noncoms, with fundamentals on which military training is based and how to impart this information to others; also to teach correct methods of giving instruction. The school was highly successful in every respect, and at the conclusion of the last semester recently 16 men were given diplomas.

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The City Behind the Company

A SPECIAL bulletin issued by Company D, 134th Infantry, Nebraska N. G., in April, demonstrates the manner in which the city of North Platte backs its unit. The company is described by the Chamber of Commerce as "one of the city's live organizations," and pride is expressed in having so well an organized unit accredited to the city. This unit adds further proof to the fact that community backing plays a most important part in the success of a National Guard unit, and Capt. B. B. Miltenberger is to be congratulated on the handling of his company in such manner as to create unusual public interest.

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Every company library of the Infantry should subscribe to the Infantry Journal. Send in $3.00 today for a magazine worth while.

Reserve Officers' Department

Discussion of Reserve Policies

THE recently promulgated change of policy on promotion and other related matters affecting the Officers' Reserve Corps (published in the February INFANTRY JOURNAL), aroused objection from certain quarters of the Reserves. The War Department then, in order to obtain the views of the opposition to the policies to iron out possible misunderstandings, arranged for a conference on March 15, at which the Secretary of War and other representatives of the War Department met a group of Reserve officers representing the Reserve Officers' Association and others not so affiliated. The War Department was requested at this time by a group representing the R. O. A. to suspend the new policies until full consideration could be given to modifications, but no action was taken on this suggestion, probably because the policies had already been given such a long and careful study that further postponement was considered unnecessary.

The Secretary of War did, however, approve the assembly at Washington for duty in the War Department for fifteen days of a committee of Reserve officers, one from each corps area. The officers reported on April 15 and at once began the study of the new policies, with a view to making recommendations to the War Department concerning them.

Pursuit of a study with a view toward the revision of the regulations governing appointment, promotion, etc., of Reserve officers, was made early in 1926 by corps area commanders, chiefs of branches, and chiefs of staffs of the various Reserve divisions, most of these having consulted with Reserve officers before arriving at their conclusions. From May until September of last year conferences were held from time to time between officers of the War Department General Staff and Reserve officers representing the Reserve Officers' Association. Following the Reserve Officers' convention a conference of representatives of the R. O. A. and the War Department was held. Later, the retiring president of the Association was delegated to represent that organization in further conferences. On December 31, the Chief of Staff of the Army conferred with the president of the R. O. A. and a number of its vice-presidents, and opportunity was given for full criticism and recommendation with regard to the new policies.

While the above is only a synopsis of the two years' discussion and study that finally resulted in the new policies, it indicates that the Reserve representatives were given full opportunity for assisting in meeting the problem. There was difference of opinion as to solution but in principle the plan was generally approved by all interested.

In view of the fact that the policies are basicly sound and that so many Reserve officers are in favor of its more stringent requirements, believing that the Officers' Reserve Corps needs a separation of those unwilling to give any attention to military work from those who do, the policies as promulgated will no doubt stand without any considerable revision. Certain prophecies made by the opponents that the new policies would ruin the O. R. C. are without foundation; the better-founded opinion is that they will operate to increase the efficiency of the corps and make it a greater asset to the nation, while to the individual it will give a higher standing in the military profession than he enjoys today.

Col. Harold D. Mack, in his article in this issue, makes a suggestion for reorganization of the Reserve Corps, with the idea of facilitating training and esprit. He would place all Reserve officers in Training Regiments. This would eliminate a lot of overhead in training staffs, but primarily would develop an understanding of correlated duties of the various arms, especially for officers of staff departments on the duties and functions of the combat troops. According to the plan, if the officer passed the necessary tests in the Training Regiment he would be given an assignment to a war-time unit and his retention of that assignment would be contingent upon the proper continuation of his work in the Training Regiment. The idea has merits, though it might involve a number of objectionable complications.

Schedule of Credits for Reappointment

UNDER the new Reserve policies 300 hours of duty are required each five years for eligibility to reappointment as Reserve officers on the active list. A system of credits has been promulgated by the War Department for the purpose of uniformity, as follows:

1. Correspondence school courses—As announced in War Department orders for each sub-course upon satisfactory completion of examination.

2. Attendance at classes on an inactive status—As prescribed by corps area commanders and not to exceed one hour for each class. Time actually spent in class only to be counted.

3. Inactive duty training with Regular Army troops—Not to exceed four hours per day for each full day of duty to be certified to by the commanding officer of the troops.

4. Each full day of active duty—Four hours.

5. Inactive duty training with National Guard troops—Actual hours not to exceed four hours per day to be certified to by the commanding officer of the National Guard unit.

6. For warrant officers, enlisted men on the active list of the Regular Army—Sixty hours' credit for each year of the period of his current appointment in the Officers' Reserve Corps while a member of the Regular Army in which his character is excellent, to be certified to by his commanding officer.

7. Administration work as a member of a court or board convened by orders of the corps area commander—As pre-

scribed by corps area commander but not over four hours per day.

8. Reserve officers acting as instructors at unit schools—Twice the credit given to the student but not to exceed four hours per day.

9. Medical officer conducting physical examination—One-half hour per examination but not to exceed four hours per day.

10. Practical test for certificate of capacity when not earned in the same appointment period as the other requirements for certificate of capacity—Actual hours consumed in conduct of practical test.

11. Air Corps Reserve officers who fly on inactive status—Time and a half credit for all time spent in flying.

It has also been provided that an officer must have completely earned his certificate of capacity during the current appointment period if he is to be eligible for reappointment solely because of such certificate, otherwise he will receive credits as outlined above.

Physical examinations for reappointment of field officers will be required for all such appointments after July 1, 1927.

A correction has been made in the policies relative to original appointment of specially qualified persons as Reserve officers. Appointments are authorized of persons of this class in the lowest grade in all sections of the O. R. C. except Specialist, Infantry, Cavalry, Field Artillery, Coast Artillery and Air Corps, upon the approved recommendation of an examining board. Appointments in the Specialist Section may be made in any grade not above that of major, only by direction of Secretary of War or Assistant Secretary of War.

The Unassigned Section, O. R. C., may be designated by the symbol IA-Res. In this section will be placed the following, in addition to those provided in the original policies:

1. All Reserve officers who have reached the age of 64 years;

2. All Reserve officers who, upon completing 20 years' service in the Army or in the federally recognized National Guard or in both, may apply for transfer to this section; and

3. All Reserve officers who, having become physically disqualified—other than through their own misconduct—to perform the duties incident to the grades held by them may apply for transfer to this section.

No more Reserve officers will be placed in the Auxiliary Reserve, and those in the Auxiliary Reserve, upon expiration of their present appointment, will be tendered reappointment in the Unassigned Reserve.

Making a Real Army of the Reserve

THE new policies of the War Department governing the Organized Reserve, published January 10, 1927, have been greeted with mixed emotions by Reservists concerned. Some see the door of opportunity shut in their face; some see endless years in grade; some see a choice between getting down to work or to all intents and purposes losing commission; while some see the Reserve shaping into a real army.

No real soldier desires to belong to a make-believe army. Real soldiers know that constant training is required to keep officers fit to command men, and that while past experience counts,

it does not count for long in a military game which constantly is undergoing changes in the rules. Real soldiers are willing to devote time and energy to the matter of keeping fit for command. A commission is not for purposes of displaying the uniform only.

Promotion in the Reserve Corps has been very rapid since the war. The average age for grade and length of time in grade is far less in the Organized Reserve than in the Regular establishment, which, having returned to "before-the-war" grades, has not wholly emerged again, although more than eight years have passed. Today the number of Reserve officers in some grades is greater than in the A. E. F. in November, 1918.

By the new regulations some deserving officers are held back, but so are deserving officers in the Regular establishment. It looks like a long road to the top of the list; but it should be a long road. Too rapid promotion and too easy promotion are twin evils in time of peace; in war the former at least is a necessity, and in war promotion of deserving Reserve officers logically must be made in about the same proportion and to an equal degree with officers of the Regular establishment. Needs must, because a huge army will far more than absorb every deserving, proven-worth-while officer of every branch of the service in at least one grade higher than his rank prior to the outbreak of war. *Then* will certificate of capacity holders come into their own, and quickly. Meantime, advance in grade on a parity with advances made in the Regular establishment is fair; variation therefrom in favor of either Reservist or Regular is neither fair nor wise. Adequate preparedness is a fetish of the Reservist, otherwise he would not be a Reservist. Can he logically consider rapid and easy Reserve Corps promotion as aiding preparedness? There is too much analogy between the rapid growth of soft timber unfit to endure heavy stress and strain and the rapid and easy promotion which has pertained in the Reserve Corps. Slow growth in military rank as in trees and in established business suggests solidarity and tensile strength.

The new policies represent the far swing of the pendulum from the "please-take-it" policy which to date has governed the issuance of Reserve commissions. It will swing back to correct some manifest injustices and errors. The inevitable result as the policies in operation as they now stand will be to cull out the deadwood, of which there is far too much in the Reserve Corps; to separate the workers from the non-workers, and to strengthen the Reserve. And inevitably will follow, and rapidly, the time when there are found no replacements available for vacancies in grades above second lieutenant, except by promotion. *Then* certificate of capacity holders will go up.

Is it not worth slowing the pace a bit while the unfit fall out and the ranks close, when the result will be a hardened, toughened residium more capable of following or leading, as circumstances demand or opportunity offers?

The *real soldiers* will say yes. They will stick and serve and prepare; and in time they will lead. Remaining shortcoming in the present policies will be corrected in time, and the Reserve Corps will emerge a real army.—*364th Infantry Bulletin.*

Infantry Communications

By Captain Eustace M. Peixotto, *Infantry*

The Infantry Journal *presents this material of instructional nature because of the importance of the subject to Infantry and further because the author has assembled in these articles, in convenient form, material obtained from many authoritative sources, i. e., Training Regulations and publications from the Infantry School.*

COMMUNICATION is a function of command. An order issued but not received might as well have never been issued. Therefore, under the conditions of modern warfare where the issuance of orders to subordinates in person is rarely possible, communications are vital. They are also essential in the transmission of information from front to rear upon which intelligent orders of higher commanders can be based, and in securing the requisite teamwork with supporting weapons and adjacent units. Communications as a whole, stretching from the War Department to the front line, form a vast and complicated subject, which, if fully covered, goes into highly technical fields. The purpose of this study is to summarize very briefly the general subject and then discuss in greater detail the communications with which a company officer of Infantry—not a staff or communications officer—should be familiar.

The material for this study is scattered in a number of training regulations and pamphlets. These are freely quoted without the use of quotation marks or specific reference in each case, the object being not to produce an entirely original treatise, but to assemble this information in a concise form and to clarify it further by use of charts.

Each headquarters is responsible for the installation, maintenance, and operation of signal communication *to* but *not including* the headquarters of its next subordinate units, adjacent units, or the command post of any unit it supports by fire. An apparent exception to this is to be found in the exchange of runner personnel within Infantry units to be described later, which is from front to rear, but this practice does not relieve commanders of *responsibility* for communications with their subordinates.

There are two types of control of communications:

a. Tactical control is in the hands of the commander of a unit. His lines of communication must enter into his plan for the tactical disposition of his units. He prescribes axes of communications.

b. Technical control is in the hands of signal or communications officers. They are responsible for the maintenance of communications along the lines prescribed, using the means best adapted to the situation.

A simple illustrative example would be: A commander prescribes an axis of communication along a certain road (tactical control); his communications officer will then determine just what type of telephone wires will be used along the axis, and whether they will be in the road ditch or on the fence, etc. Or again, the regimental commander writes a message to one of his battalion commanders. The communi-

cations officer determines whether it is best to send the message by radio, motorcycle messenger, or other means (technical control).

The axis of signal communication which is designated in paragraph 5 of field orders down to and including the battalion is the route along which successive positions of a command post are expected to be established in an advance. It is usually also the approximate route for wire lines and messengers between the command posts located on it.

AGENCIES OF SIGNAL COMMUNICATIONS

The following agencies of signal communications are employed in our Army:

1. Message center
2. Wire system
   a. Telephone
   b. Telegraph
3. Radio system
   a. Telegraph
   b. Telephone
4. Messengers
   a. Dismounted (runners)
   b. Mounted (horses)
   c. Bicycle, motorcycle, motor car, rail, water and airplane.
5. Homing pigeons
6. Visual
   a. Lamp
   b. Flag
   c. Pyrotechnic
   d. Panels
7. Arm and whistle.

Following is a brief description of each:

1. A *message center* is charged with the receipt, transmission, and delivery of all dispatches of the headquarters to which it belongs. It keeps itself informed of the state of the several means of communication available and transmits messages accordingly. It is capable of division into two echelons, one of which moves forward when a new command post is to be established, the other remaining behind and functioning until the new post is ready to take over, when it also moves up.

The message center does not perform clerical work for staff officers or copy messages. It attends to encoding, decoding, or deciphering of messages when such practices are necessary. A message center forms a part of every headquarters down to and including the battalion.[1]

2. *Wire Systems*—Technical advantages and disadvantages of the various means of wire communication are beyond our present field. A brief discussion of these may be found by those interested, in T. R. 160-5.

Telegraph lines normally include down to the division headquarters only.

Telephone systems ordinarily terminate at battalion headquarters. In stabilized situations or on outpost duty, company headquarters may be connected by telephone, but this is the exception rather than the rule. The disadvantage of the telephone is the lack of record of the conversation. Important orders issued over the telephone should be confirmed in writing. The advantages obviously, are personal contact and quick reply to inquiries.

All officers should be familiar with the following rules for conversations over military telephones:

(1) Never answer "Hello." State name or designation of office and individual answering the call; for example, "Company A, 30th Infantry, Lieutenant Smith speaking."

(2) Always "ring off" when using a hand ringing (magneto) telephone. This is the type supplied Infantry organizations in the field.

(3) Telephone conversations should

[1] T. R. 160-5 States: "The first sergeant is usually the company message center," but the Infantry School advocates that the company operate *without a message center* and that the signal sergeant be in charge of all communications and communications personnel at the rifle company command post. A recommendation is being made to change T. R. 160-5 accordingly (Letter to writer Oct. 23, 1926).

be brief to keep the lines clear. Mentally prepare what you are going to say before the call is made.

(4) Telephone conversations must be discreet since secrecy is never assured.

(5) Spell out words which are liable to be misunderstood. In such spelling, to avoid confusion of letters having similar sounds, the following pronunciations should be used. These should be pasted on each instrument:

A equals ACK	N equals N
B equals BOUGH	O equals O
C equals CAW	P equals PIP
D equals DON	Q equals QUASH
E equals E	R equals R
F equals F	S equals ESSES
G equals GOGO	T equals TOC
H equals H	U equals U
I equals I	V equals VIC
J equals JIG	W equals W
K equals K	X equals X
L equals L	Y equals YOKE
M equals EMMA	Z equals ZED

The following pronunciation of figures is habitually used:

0 equals Zero. With a long 0.
1 equals Wun. With a strong N.
2 equals Too. With a strong T and long 00.
3 equals Th-r-r-ee. With a slightly rolling R and long E.
4 equals Foer. As one syllable with a long O.
5 equals Five. With a long I and strong V.
6 equals Six. With a strong X.
7 equals Sev-en. As two syllables.
8 equals Ate. With a long A and strong T.
9 equals Nien. As one syllable with strong N on the end.

3. *Radio Systems*—The constant improvement of this means of communication is likely to make it of great utility in future wars. Its advantages of distant communication without the need of wire are obvious. Its disadvantages are: (1) liability to interruption by natural and enemy interference, and (2) lack of secrecy. By goniometric stations the enemy can locate our radio stations and so our command posts and from these locations deduce our general dispositions and strength. Radio stations are organized into "nets," each having a different wave length assigned. The regimental net includes the regimental CP (command post), those of the three battalions and supporting artillery. The brigade net includes the brigade CP and those of the two regiments, supporting troops and airplanes. The division, corps, and army have similar nets.

4. *Messengers* — Messengers of all classes wear a red "brassard" or arm band. When not equipped with a dispatch bag they carry messages in the upper left hand pocket of the coat or shirt. A regularly scheduled messenger service between units is maintained by the superior units. Special messengers with important dispatches are sent as needed by the commander sending the message. When a message is likely to fall into the hands of the enemy it is sent by two messengers, each taking a different route.

5. *Pigeons*—The Army pigeon company cares for, breeds, trains, and furnishes pigeons for all the various units needing them. The assignment of pigeons to a command post is not to be considered as routine or normal because they are only furnished (except for training purposes) when the unit to which they are sent needs them because of some special mission. Infantry personnel at message centers designated as "pigeoneers" need only know how to care for the birds during the short time they are in charge of them, how to fasten messages on them, and how and when to release them.

(*To be continued*)

Military Notes on Foreign Armies

Furnished by the Military Intelligence Division, G. S.

France

New Pay Rates The rates of pay for officers and noncommissioned officers in the French army have been increased to correspond somewhat to the increased cost of living. Although their pay is now three times what it was in 1914, the retail price index is approximately six times what it was then. As a result their pay has suffered a net reduction of about half even with the present increase. The present change increases pay proper. The allowance for military expenses is reduced slightly, part of it being incorporated in the new schedules of pay proper.

The new pay tables are far more complicated than those in use in the American Army. Instead of there being a fairly uniform pay basis for all officers, practically no two officers in the French army receive exactly the same pay. This is due not only to the fact that pay is based on rank and length of service but also to the many allowances. It has been said that few officers can compute their own pay and allowances; it takes an expert in such matters.

Probably the most unusual allowance given French military personnel, certainly the most interesting one from the point of view of principle involved, is the one for extra expenses incidental to the military service. All government officers and employees, including military, naval, and those of the other ministries, are paid according to the same pay schedules. By the institution of the allowance for "charges militaires," as they are called, there is recognized the fact that military personnel occupy a peculiar position in the eyes of the government and public which necessitates greater expenses. This allowance is intended to defray, at least to some extent, the additional costs incurred by military personnel and their dependents in entertaining, purchase of two sets of clothes (military and civilian), maintaining at all times a very neat appearance, riding first or second class in trains and subways (accordingly as the person is an officer or higher noncommissioned officer), etc. The importance of this allowance is emphasized when it is compared with the pay for each grade. Thus it is noted that for bachelor officers it amounts to from 20 per cent for lieutenants to about 6 per cent for generals. Married officers receive about double the allowance for bachelors. Three scales of the allowance are in force, which are applied according to the cost of living at the station.

As a very great majority of French officers, probably 80 per cent, are not furnished quarters in kind, their pay is based on the assumption that they must themselves provide quarters. When an officer is furnished quarters in kind, deduction is made from his pay, the amount varying according to

his rank and to whether the quarters are furnished or unfurnished.

In computing pay for length of service all military service, as cadet, enlisted man or officer is counted. In addition, constructive service is granted officers who have graduated from either of the two military academies. The course of instruction is two years at each school. To graduates of the École Polytechnique (engineer and artillery), 2 years constructive service is credited, 1 year constructive service being credited to graduates of St. Cyr (Cavalry and Infantry).

Officers are allowed 45 days' leave of absence with full pay per year. Ordinarily this leave can not be saved up or accumulated, but if service conditions prevent taking advantage of it in one year it can be used during the next year. Under exceptional circumstances leave for one year with full pay may be granted. Each year a limited number of officers may be granted leave for two or three years without pay (usually to establish themselves in civil life). This year's budget limits the number of such officers to 2,000.

Before publication of the new pay tables noncommissioned officers had received increases in pay for length of service after 5 years, 8 years, and 10 years service. A new pay period has now been added: after 15 years service, and it is contemplated creating an additional one during the year for those with over 20 years service.

The following list gives an idea of the most important allowances ("indemnities"): For children, for temporary absence, for military expenses, for office expenses, original allowance for uniforms granted to second lieutenants and high-ranking N. C. O.'s, for change in uniform when an officer or warrant officer is transferred from one regiment to another which has a different uniform, rental allowance for noncommissioned officers and enlisted men, allowance upon commencement of a campaign, allowance upon departure for foreign service, for special duty for officers and noncommissioned officers in air service, at prisons, in foreign legion, etc., for special duty for officers with dependents on duty at service schools, and for flying pay.

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Japan

Students Versus Regulars

The first maneuvers in which students, trained under the system of military training in schools, have been opposed to forces of the regular army were recently held near Osaka. On this occasion 2,288 boys from 17 different schools composed a force commanded by Lieutenant General Shibayama which operated against the 4th Division, commanded by Lieutenant General Muraoka. The maneuver lasted two days and the students, as well as the regulars, spent the intervening night in bivouac in the open. It was reported in the press that the student force acquitted itself most creditably in these maneuvers.

Special Courses for Officer Instructors

Due to the fact that the army is finding it difficult to find suitable officers to supply the demand for instructors at schools and colleges throughout the country, it has been decided to establish a special course of training for officers to be detailed on this duty. In this way it is planned to gradually develop a corps of officers specially trained.

Aviation Training for Cadets

With a desire to emulate the example set by the United States Army, the Japanese military authorities have commenced agitation to give all officers of the army flying training for about 10 hours a year. However, financial conditions in Japan will not permit of any such extensive program. Consequently it has been recommended to the war office that all cadets at the military academy be given at least five hours' training in flying every year at army flying schools and at air regiments. It is proposed to make this instruction compulsory for all students. This course of training will not entail any great outlay of money, and it is possible of consummation, whereas to give such training to all army officers, is financially impossible.

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China

Manchurian Armored Train

A new armored train belonging to the Manchurian (Fengtien) forces recently made its appearance at Tientsin.

The train, bearing the name "Chihli," consists of six armored cars and an armored locomotive. The train is made up as follows:

1st, a flat car carrying railway materials;

2d, an armored car carrying guns in turrets;

3d, an armored car carrying a Stokes mortar;

4th, the locomotive;

5th, a combination kitchen car, commissary and quarters;

6th, same as the 2d car, with guns in turrets;

7th, same as the 1st, car with railway materials.

The cars carrying guns have a 75-mm. gun at the end of the car towards the end of the train. The gun is mounted on a fixed base in a turret having a sweep of about 270 degrees. The turret consists of two parts; the lower part, which is stationery, is fitted with rollers on its top rim upon which the upper part revolves. The gun is fired through a small slot. Mounted in a similar turret, but above and in rear of the 75-mm. one, is a 4.7-inch gun with a sweep of 360 degrees. On either side of the 75-mm. turret is a 37-mm. gun having a sweep of about one foot, firing through a slot. Two machine guns firing through slots are placed on each side of the car which is also loopholed for rifle fire.

The car carrying the Stokes mortar has two machine guns firing through loopholes on each side of the car. About the center of the car is a hole circular in shape with diameter the full width of the car. The hole is rimmed with a piece of boiler plate extending six inches above the top of the car through which peep-holes have been cut to provide observation. About five feet below this hole is a platform on which the Stokes mortar is mounted.

The cars are armored with a double thickness of heavy boiler plate placed about 14 inches apart. The space between these two plates has been filled with reinforced concrete. The engine is completely sheathed with boiler plate so as to make it almost identical in appearance with that of the other cars when viewed at a distance.

The entire train is heavily camouflaged with newly painted designs, the railway material on the flat cars being covered with camouflaged canvas. It was manned by some one hundred Russian officers and soldiers.

Notes on the Association

Infantry Reception to Chief of Staff

THE Washington Branch of the Infantry Association held a reception and dance at Washington Barracks on the afternoon of March 31, honoring Maj. Gen. and Mrs. C. P. Summerall. The invited guests included members of Congress, the chiefs of all branches and departments of the War Department, high ranking officers of the Navy and Marine Corps, and foreign military attachés.

A special military formation was held at the barracks to welcome the guests of honor upon their arrival, in which a large contingent of troops from the 12th Infantry participated. More than 1,200 Infantrymen, their wives, and guests passed through the receiving line.

The occasion was probably the largest Infantry function ever given in Washington, and the enthusiasm manifest was an indication of the high esteem in which the Infantry and the Army holds General and Mrs. Summerall.

The arrangements for the social features were made by the ladies of the Infantry who, together with the officers of the Washington Branch, are congratulated on the success of the affair.

General Summerall, in commenting on the occasion, expressed his grateful appreciation for the compliment paid Mrs. Summerall and himself, recalling no finer evidence of friendship than the welcome by the officers and ladies of the Infantry.

New Branches Organized

THE 16th Infantry has reorganized the regimental branch at Fort Jay, N. Y., with Lieut. Col. Stephen O. Fuqua as president, Capt. A. H. Cummings, secretary, and Lieut. S. M. Lansing, treasurer.

The 12th Infantry Branch of the Infantry Association was organized on March 31 at Fort Howard, Md. Col. Joseph W. Beacham was elected president; Lieut. Col. Wm. P. Screws, vice president, and 1st Lieut. Warren W. Christian, as secretary and treasurer. All officers on duty with the regiment are now members of the association. The 3d Battalion of the regiment, stationed at Fort Washington, Md., has no separate branch, but all officers of the battalion are members of the Washington Branch. Major W. H. Simpson commands the battalion.

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Helping Us to Help Others

DURING the past thirty days the Infantry Association has added more than 100 memberships from officers of the Infantry Reserve, besides a large number from the Regular Army and National Guard. The following officers assisted last month in procuring memberships from the National Guard and Reserves, sending in the number following their respective names:

Major James W. F. Allen, Inf., instructor, Arkansas N. G., 4; Capt. N. E. Callen, instructor, Pennsylvania N. G., 3; Major Albert Tucker, instructor,

Texas N. G., 2; Capt. George F. Davis, Inf., instructor 182d Inf., Massachusetts N. G., 2; Capt. Arthur Blackburn, Inf. Res., adjutant, 319th Infantry, 1; Capt. Theodore Bundy, instructor, Ohio N. G., 1; Major J. S. Leonard, Inf., D. O. L., 1; Capt. Edwin T. Wheatley, instructor, 140th Inf., Missouri N. G., 1.

We thank them heartily and hope they will continue their good work for the success of our Association.

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The June Infantry Journal

IN the June number, the INFANTRY JOURNAL will feature an article by Maj. Gen. Leonard Wood, Governor General of the Philippine Islands. It will also contain a critical study on our present doctrine of machine guns in the defense, by Lieut. Col. Walter C. Short, Inf., as well as other articles of timely professional interest.

We are always glad to receive discussion of articles from our readers with a view to publishing the comments.

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An Improved Paper

IN order to facilitate the binding of copies of the INFANTRY JOURNAL, as so many readers do, we have decided to use a lighter weight paper. This improvement will not alter the effectiveness of the half-tones, as the coating on the paper is the same. We first used the lighter weight paper in the April number, and because of the many comments favorable to its continuance, we have decided to carry on with it.

Local Branches and Organization Representatives

The Infantry School, Fort Benning, Ga.
Pres.: Col. Wait C. Johnson, 24th Inf.
Sec.: Maj. L. P. Ford, Inf.
Asst. Sec.: Capt. R. M. Sandusky, Inf.

The Tank School, Camp Meade, Md.
Col. C. Miller, Inf. (Tanks), Comdt.
Col. O. S. Eskridge, Inf. (Tanks), Asst. Comdt.

Washington, D. C.
Pres.: Col. Fred R. Brown, G. S.
V.-Pres.: Maj. Charles Thompson, G. S.
Sec.-Treas.: Maj. R. E. O'Brien, Inf.

Fort Leavenworth, Kans.
Pres.: Lieut. Col. John Scott, Inf.
Sec.: Maj. Troy B. Middleton, Inf.

West Point, N. Y.
Pres.: Brig. Gen. Merch B. Stewart.
Sec.: 1st Lieut. George S. Eyster, Inf.
Treas.: Capt. Francis Heraty, Inf.

1st Infantry (Fort Sam Houston, Tex.)
Pres.: Col. J. F. Preston, 1st Inf.
Sec.: 1st Lieut. A. J. Monger, 1st Inf.

Fort Wayne, Mich. (2d Inf.)
Pres.: Lieut. Col. Jas. G. Hannah, 2d Inf.
V.-Pres.: Maj. Max B. Garber, 2d Inf.
Sec.: Capt. Wm. J. Niederpruem, 2d Inf.

Fort Brady, Mich. (2d Inf.)
Pres.: Lieut. Col. A. E. Deitsch, 2d Inf.
Sec.: 1st Lieut. Henry W. Isbell, 2d Inf.

3d Infantry (Fort Snelling, Minn.)
Regtl. Rep.: 1st Lieut. James Notestein, 3d Inf.

Fort George Wright, Wash. (4th Inf.)
Pres.: Col. Henry A. Ripley, 4th Inf.
Sec.: Capt. W. L. Clemensen, 4th Inf.

Fort Missoula, Mont. (4th Inf.)
Pres.: Capt. Edwin E. Elliott, 4th Inf.
Sec.: 1st Lieut. E. M. Sutherland, 4th Inf.

Fort Lawton, Wash. (4th Inf.)
Pres.: Lieut. Col. H. G. Davids, 4th Inf.

6th Infantry (Jefferson Bks., Mo.)
Regtl. Rep.: Capt. G. L. Hartman, 6th Inf.

Vancouver Barracks, Wash. (7th Inf.)
Pres.: Col. F. J. Morrow, 7th Inf.
Sec.: Capt. T. A. Harris, 7th Inf.

Fort Screven, Ga. (8th Inf.)
Pres.: Col. R. J. Burt, 8th Inf.
Sec.: Capt. Maximilian Clay, 8th Inf.

Fort Moultrie, S. C. (8th Inf.)
Pres.: Lieut. Col. R. John West, 8th Inf.
V.-Pres.: Maj. W. J. McCaughey, 8th Inf.
Sec.: Capt. Lewis Simons, 8th Inf.

9th Infantry (Fort Sam Houston, Tex.)
Pres.: Col. E. G. Peyton, 9th Inf.

V.-Pres.: Lieut. Col. C. J. Nelson, 9th Inf.
Sec.: Capt. M. B. Ridgway, 9th Inf.

Fort Thomas, Ky. (10th Inf.)

Pres.: Col. Dana T. Merrill, 10th Inf.
Sec.: 2d Lieut. Earl Mattice, 10th Inf.

11th Infantry (Fort Benj. Harrison, Ind.)

Pres.: Lieut. Col. E. J. Nowlen, 11th Inf.
Sec.: Capt. E. A. Green, 11th Inf.

12th Infantry (Fort Howard, Md.)

Pres.: Col. J. W. Beacham, 12th Inf.
V.-Pres.: Lieut. Col. W. P. Screws, 12th Inf.
Sec.-Treas.: 1st Lieut. W. W. Christian, 12th Inf.

13th Infantry (Fort Andrews, Mass.)

Pres.: Col. W. K. Naylor, 13th Inf.
Sec.: Capt. R. G. Lehman, 13th Inf.

14th Infantry (Fort Davis, C. Z.)

Rep.: Capt. Ira E. Ryder, 14th Inf.

Tientsin, China (15th Inf.)

Pres.: Col. Isaac Newell, 15th Inf.
Sec.: Capt. G. A. M. Anderson, 15th Inf.

16th Infantry (Fort Jay, N. Y.)

Pres.: Lieut. Col. S. O. Fuqua, 16th Inf.
Sec.: Capt. A. H. Cummings, 16th Inf.
Treas.: 2d Lieut. S. M. Lansing, 16th Inf.

17th Infantry (Fort Crook, Neb.)

Pres.: Col. C. A. Trott, 17th Inf.
Sec.: Capt. J. B. Harvey, 17th Inf.

Fort Des Moines, Ia. (17th Inf.)

Rep.: 1st Lieut. R. F. Ennis, 17th Inf.

19th Infantry (Schofield Bks., T. H.)

Pres.: Col. Truman O. Murphy, 19th Inf.
V.-Pres.: Lieut. Col. S. T. Mackall, 19th Inf.
Sec.: Capt. R. M. Fitzpatrick, 19th Inf.

20th Infantry (Fort Sam Houston, Tex.)

Pres.: Col. Fred L. Munson, 20th Inf.
Sec.: Capt. Carl C. Anderson, 20th Inf.

21st Infantry (Schofield Bks., T. H.)

Pres.: Col. Ralph McCoy, 21st Inf.
Sec.: Capt. G. W. Lester, 21st Inf.

22d Infantry (Fort McPherson, Ga.)

Pres.: Col. George F. Baltzell, 22d Inf.
Sec.: Capt. S. C. Harrison, 22d Inf.

23d Infantry (Fort Sam Houston, Tex.)

Pres.: Col. Charles B. Clark, 23d Inf.
Sec.: Capt. James Hunter, 23d Inf.

25th Infantry (Camps Stephen D. Little and Harry J. Jones, Ariz.)

Pres.: Col. A. J. Dougherty, 25th Inf.
V.-Pres.: Capt. C. M. Walton, 25th Inf.
V.-Pres.: Capt. Edgardo Vasquez-Bruno, 25th Inf.
Sec.: 2d Lieut. E. B. Gose, 25th Inf.

26th Infantry (Plattsburg Bks., N. Y.)

Pres.: Col. John H. Hughes, 26th Inf.
Sec.: Maj. Vernon Evans, 26th Inf.

27th Infantry (Schofield Bks., T. H.)

Pres.: Col. Laurence Halstead, 27th Inf.
Sec.-Treas.: Capt. Willard S. Paul, 27th Inf.

Fort Niagara, N. Y. (28th Inf.)

Pres.: Col. R. E. Ingram, 28th Inf.
V.-Pres.: Maj. F. J. Ostermann, 28th Inf.
Sec.: Capt. S. J. Grogan, 28th Inf.

Madison Bks., N. Y. (1st Bn., 28th Inf.)

Pres.: Maj. A. Ellicott Brown, 28th Inf.
Sec.: 1st Lieut. E. J. FitzGerald, 28th Inf.

Fort Ontario, N. Y. (3d Bn., 28th Inf.)

Pres.: Lieut. Col. G. A. Herbst, 28th Inf.
Sec.: 1st Lieut. E. L. Miller, 28th Inf.

30th Infantry (Presidio of S. F., Cal.)

Pres.: Col. F. C. Bolles, 30th Inf.
Sec.: Capt. H. N. Gilbert, 30th Inf.

31st Infantry (Manila, P. I.)

Pres.: Col. D. G. Berry, 31st Inf.
V.-Pres.: Lieut. Col. H. Clay M. Supplee, 31st Inf.
Sec.: Capt. Charles P. Lynch, 31st Inf.

34th Infantry (Fort Eustis, Va.)

Pres.: Col. T. W. Darrah, 34th Inf.
Sec.; Capt. Jeffry Montague, 34th Inf.

35th Infantry (Schofield Bks., T. H.)

Rep.: Capt. N. D. Cota, 35th Inf.

Fort Douglas, Utah (38th Inf.)

Pres.: Col. W. B. McCaskey, 38th Inf.
V.-Pres.: Maj. J. C. Thomas, 38th Inf.
Sec.-Treas.: Capt. C. J. Allen, 38th Inf.

Fort Logan, Col. (38th Inf.)

Pres.: Lieut. Col. Lochlin W. Caffey, 38th Inf.
Sec.: Capt. Maurice Rose, 38th Inf.

45th Infantry (Manila, P. I.)

Pres.: Col. E. W. Tanner, 45th Inf.
Sec.: Capt. J. C. McGovern, 45th Inf.

57th Infantry (Manila, P. I.)

Pres.: Col. C. C. Todd, 57th Inf.
V.-Pres.: Maj. John H. Caron, 57th Inf.
Sec.: Capt. A. J. McFarland, 57th Inf.

Porto Rico (65th Inf.)

Pres.: Col. G. H. Estes, 65th Inf.
V.-Pres.: Lieut. Col. Walter C. Short, 65th Inf.
Sec.: Capt. Frederick McCabe, 65th Inf.

130th Infantry, Illinois N. G.

Pres.: Col. A. L. Culbertson.
V.-Pres.: Lieut. Col. Robert W. Davis.
Sec.: Capt. John E. Wansbrough.

ANNOUNCING A

Prize Essay Contest

ON THE SUBJECT OF—

What is the Principal and Never Changing Mission of the Commissioned Officer of Infantry of the Four Lower Grades?

THE functions of the Army at large and of the Infantry in general are today much broader than they were 15 or 20 years ago. Moreover, today there is a strong tendency toward specialization. There arises the possibility, then, that the officers of Infantry of the four lower grades may lose sight of their principal and never changing mission in the service.

THEREFORE, it might prove interesting to ask the Second Lieutenant of Infantry charged with the supervision of the company mess, issues of clothing, and similar duties the following question. "As a commissioned officer of Infantry, what do you conceive to be your principal and never changing mission?" The same question might well be asked of the First Lieutenant who is judge advocate of a General Court, and, in addition to his other duties, is Post Exchange Officer, Police Officer, etc.; of the Captain commanding a Howitzer Company; of the Major, military attaché in Capital City, and so on through the long list of those officers whose duties sometimes seem to have little to do with the profession of arms. It may be that the answers obtained from a large number of such officers would be essentially the same. On the other hand there might be a wide divergence of opinion.

LET us consider this question as a problem for solution. Required: *the answer in not more than 100 words.* It may be solved via the estimate of the situation and the clean cut, unequivocal decision, or in any other way the student sees fit. Besides being all important and never changing, the missions described in solutions should be specific and definite, such as to be of real help to those endeavoring to carry them out, whenever, during their careers, decisions and action are required. Such generalities as "To perform my present duty to the best of my ability and to prepare myself for the duties of the next higher office or grade" should be avoided.

IT IS proposed that the three solutions of the above problem deemed the best by competent judges will be published in the August INFANTRY JOURNAL without alteration or amendment. A composite of all the solutions submitted will be published at the same time.

SOLUTIONS should reach the Editor, INFANTRY JOURNAL, Infantry Building, Washington, D. C., by June 15, 1927. Prizes will be ten, five and three dollars.

$1,500 Prize for Music Suitable for An Infantry Song

The INFANTRY JOURNAL announces a contest for the music for "The Infantry Song" with a prize of $1,500.00 cash for the entry adjudged the winner.

The Infantry has for years felt the need of a song that it can call its own. Many attempts have been made to produce it, but none has been successful.

The largest body of Infantrymen ever assembled in the history of America was demobilized a few years ago. Those millions of Doughboys had a spirit that has been nurtured in hearts of American Infantryman for 150 years; that spirit needs to be translated into music and song for the Infantry of the present and of the future.

As expressed by Sergeant Albert S. Dowling, 7th Engrs., in his verses on the endeavor to produce an Infantry song:

They're goin' to hav' 'em a he-man's song
For th' good old Infantry;
A song to sound through th' halls of time;
An' give to posterity,
The sturdy souls, an' the spirit bold,
An' th' brave an' honest hearts of gold
Of th' Fightin' Infantry.

GENERAL CONDITIONS OF THE CONTEST:

1. The contest is opened November 1, 1926, and is to be closed at noon on July 1, 1927.

2. The object of the contest will be to produce original music, in march time, that will be suitable for a song (with chorus) for the Infantry. The music to be simple, catchy and capable of being learned readily by the rank and file, and at the same time that will be stirring and full of pep, but free from jazz.

3. The prize of $1,500 will be paid to the contestant whose music is judged by a committee of judges appointed by the Executive Council of the Infantry Association as appropriate for the Infantry Song, subject to the approval of the Council. The Council reserves the right to reject any and all manuscripts entered in the contest.

4. There will be no limit on the number of entries submitted by any contestant. Citizens of the United States, or those who have declared their intentions to become citizens, will be eligible.

5. The manuscripts shall be legibly written. The melody is to be arranged for piano or for band. Words suggested for the song may accompany the music.

6. Contestant will be required to subscribe to all conditions of the contest on approved form, furnished upon request by the INFANTRY JOURNAL, before entry or entries will be accepted.

7. The music judged the winner of the contest will become the property of the U. S. Infantry Association, which reserves all rights to publication. No general distribution or sale will be made until suitable words for the music, approved by the Executive Council, shall be announced. A royalty will be paid the composer.

8. The usual rules concerning nom de plume will be adhered to. Only the name of the successful competitor will be published.